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# LONDON MEDICAL GAZETTE.

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VOL. VI.





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MEDICAL GAZETTE;

BEING A

Weekly Journal

*Handwritten: Captain Rogers*  
OF

MEDICINE AND THE COLLATERAL SCIENCES.

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# THE LONDON MEDICAL GAZETTE,

BEING A  
WEEKLY JOURNAL

OF

*Medicine and the Collateral Sciences.*

SATURDAY, APRIL 3, 1830.

## LECTURES ON SURGERY,

*Delivered at St. Bartholomew's Hospital,*

By WILLIAM LAWRENCE, F.R.S.

### LECTURE XXIX.

*Malignant diseases—Schirrus—Cancer—Car-  
cinoma.*

THE affections, gentlemen, of which I have hitherto spoken, are all of them of a curable nature; and in many instances, though attended with great temporary disturbance of the part, and with a serious influence on the system at large, yet the derangement is of a temporary kind; and after going through a certain process the part recovers its functions, or at all events, even if it have become seriously injured in that respect, it may recover so far that the life of the individual is preserved. I now proceed to mention some affections that seem to be essentially of a destructive character—in which there is not the same salutary tendency as in those that we have hitherto considered; not the same natural disposition to recovery after going through the diseased process, but where the nature of the action tends to the destruction of the textures of the organ in which it is seated, and which even proceeds to the destruction of life. Such seems to be the essential character of the affections that I am now going to describe to you; and hence they have been called *malignant diseases*, in opposition to the former.

The diseases which we call *cancer*, *fungus hæmatodes*, and *melanosis*, all of them agree in the two points that I have now mentioned; that is, they completely destroy the natural texture of the part in which they take place, and they also proceed to affect other parts besides those in which they primarily originate, by which extension they destroy the life of the individual. In these leading

features, cancer, fungus hæmatodes, and melanosis, severally agree; and hence they are very commonly described together, and have been regarded by some as one affection. There is, however, an essential difference between them: although they have the same destructive tendency in relation to the parts and the life of the individual, yet they differ in the nature of the changes which they produce in the affected part, and they differ in the age of the individuals whom they attack, as well as in respect to certain other points in their course and termination.

It is only of late years comparatively that these different affections have been distinguished from each other, and indeed even now they are very often described together under the term cancer. I find this is the case in some of the most modern French works: for example, in the French dictionary of medicine, in twenty-one volumes (which, by the way, is a very excellent work), in the article Cancer, I observe the several affections now alluded to are all grouped together, being considered as coming under that denomination. There is a work, entitled "*Recherches sur le Traitement du Cancer par la Compression*," &c. by M. Recamier, of the Hotel Dieu, in two volumes, published this year, in which he has described as cases of cancer not merely those that we should assign to cancer, according to our acceptation of the term, but also cases of fungus hæmatodes and melanosis. I certainly think the arrangement I have now mentioned is defective. There are such obvious distinctions between melanosis and fungus hæmatodes on the one side, and cancer on the other, that it is highly inconvenient to mix them together in one description.

Cancer consists in a peculiar change of structure of the organ in which it is seated, and the principal character of which is an unnatural hardness or induration. It may, or may not, be accompanied with swelling of the part. The change of structure then proceeds into a state of ulceration; it does

not remain limited to the organ in which it has first arisen, but extends to the neighbouring parts. It shews itself in other forms in the internal organs of the body; it produces pain, emaciation, and serious constitutional affections; and by the progress of the local symptoms in the part first affected, and by the increase of those constitutional symptoms, it destroys the patient. The swelling and induration of the part which constitute the first stage of the disease, are denominated *schirrus* or *occult cancer*. The disease is called *schirrus* in that early state of its development. The word *cancer* or *carcinoma* is more properly applied to the ulcerated stage, *carcinoma* being equivalent to what, in common language, is called open cancer. The essential nature of the disease, then, seems to consist in the succession of these two stages—that of induration and that of ulceration. Now the word *schirrus* is applied frequently by modern writers to any hard enlargement of an organ, without considering whether this is of a nature likely to proceed to the subsequent change of *carcinoma* or ulceration. In this sense the word is applied by Boyer, in his treatise on surgical diseases. In his article on the subject of *schirrus*, he merely defines it as enlargement and induration of a part; and says that *schirrus* sometimes proceeds to cancerous ulceration, and in other instances does not.

Now the mere character of hardness is not in itself a proper basis for distinction in pathology. Various affections, different in their essential nature, agree in possessing that single character. The mere circumstance, therefore, of consistence, is not of itself a sufficient ground of distinction on which to establish a particular class of diseases. I think, therefore, it is best to keep to what writers in this country now do, namely, to restrict the term *schirrus* to those changes in the structure of a part which will subsequently ulcerate and become carcinomatous.

Intractable ulcerations affecting the skin, although they may not have been preceded by obvious tumour, or a state of *schirrus* induration, generally pass, particularly in common language, under the name of cancer; in fact, that seems to be the form which cancer generally assumes when it affects the cutaneous texture; so that, perhaps, if we were to employ the term very strictly we should find that we could hardly lay down, as a general rule, the necessity of any previous existence of *schirrus* enlargement.

Now we generally see cancer occurring as a change in some particular organ: however, cancerous structure, that is, *schirrus* enlargement which proceeds subsequently to ulceration, may occur as a newly-formed tumour in any part of the cellular texture of the body, like other tumours; this, however, is not common.

The parts of the body which are most sub-

ject to cancer are, in the first place, the female breast, the stomach, or at least certain parts of it, (the cardiac and pyloric extremities), the rectum, the uterus, the lip, the tongue, the penis, the testicle, and the ovary. These are parts in which *schirrus* occurs primarily; but in the advanced stage of cancer, secondary depositions of a cancerous nature, may take place in a great variety of parts of the body. The absorbent glands commonly become affected; the lungs, the liver, the bones, and various internal parts, may be the seats, in a secondary way, of cancerous affection. It is often stated in the accounts of those parts which are most frequently the seat of cancer that the testis of the male, and the ovary of the female, are among these; indeed, you will find that the testes and the ovaria are often enumerated as parts particularly subject to cancer. This I consider to be by no means a correct representation, if we confine the term cancer to the change I have mentioned; for in that case we should say that *schirrus*, and the subsequent transition into cancerous ulceration, are extremely rare, both in the testes and ovaria.

Now in order to give you a general notion of the nature of cancer, I believe it will be the best plan to describe the course which the disease takes in the female breast; for the observations that I shall have to make to you respecting the nature of the diseased change, its course, and ultimate effects, as well as respecting the ages of those that are subject to it, and the kind of treatment that is appropriate, will be applicable to the disease generally; but we shall understand the matter better by this kind of individual example than if we were to make a series of general remarks.

The disease, at the commencement of its attack on the female breast, by no means presents that formidable character which it shews in its progress and termination; indeed, for a certain period, it exists merely as an indolent swelling in the breast, which is hardly noticed by the individual in whom it takes place. It very commonly happens that the female discovers by accident the existence of a *schirrus* lump in the breast; and that when she first perceives it, it has already attained a considerable size. She finds, perhaps, a lump, the size of a walnut, without being previously aware that any disease existed in the part. In this indolent state the *schirrus* lump will often remain for many months, or even some years—for two or three years, not enlarging nor producing any pain. There is a hard tumor, which is loose and moveable; no discoloration of the skin, and no uneasiness perceived in it. After a time, however, the disease loses this indolent character, and assumes a much more active progress, with symptoms that obtrude themselves on the notice of the patient. The

tumor becomes painful ; it increases in size ; some degree of heat, and sometimes a degree of redness and swelling of the breast generally, are perceived. When we come to examine the swelling at this time—and this is the period when it is usually submitted to our examination—we find it characterized by a peculiar incompressible hardness, possessing nothing like elasticity to the feel. You cannot compress it ; it has almost the hardness of a stone or solid substance. The surface of the tumor is generally uneven, more or less knotted or tuberculated. It is loose and moveable, not adherent to the pectoral muscle or integuments ; so that you can move it about easily, and it feels circumscribed. On examining the breast carefully, you usually observe, particularly if the tumor is increasing, that the superficial veins of that side are much larger and more conspicuous than they are on the other side of the chest. Sometimes they almost assume a degree of varicose enlargement, but usually in the active period of the disease there is a marked difference between the superficial veins of the two sides of the breast. The pain at the commencement of the tumor is not in general constant ; it generally comes on at particular periods, and then ceases for a time ; it is of a darting or shooting character, and such as has been called lancinating. Then the patient is sometimes quite easy ; but all of a sudden a sharp darting pain is experienced in the part, and frequently at this period the pain is very severe. About the same time we usually find that the lymphatic glands of the axilla become affected. You find, perhaps, one or more of them enlarged ; and some pain is experienced in the gland, of a kind similar to that which is felt in the tumor.

In the progress of the affection we soon find that the disease begins to extend from the circumscribed tumor, of which it at first consists, to the surrounding parts. In the first place the skin becomes adherent to the swelling upon the most prominent point ; it is fixed to it ; and frequently, in consequence of this, the skin appears to be drawn or tucked in opposite to the swelling, so that you see the situation of the swelling by this retraction of the skin. Sometimes a deep fold is produced by this adherence of the skin to the tumor : at the same time it is not uncommon to observe a retraction of the nipple, so that you find the nipple of the affected breast considerably less elevated than that of the opposite side ; sometimes it is, in fact, completely drawn in ; and occasionally you find, instead of forming a prominence, that the nipple is situated at the bottom of a depression—the retraction is so considerable. The tumor, after it becomes adherent to the skin, sometimes is also fixed to the pectoral muscle. The cellular texture which intervenes between them becomes consolidat-

ed, and the tumor can no longer be moved laterally on the surface of the muscle. After some time the mammary gland, together with the skin which covers it, and the pectoral muscle, form one hard mass, very firmly connected to the surface of the chest, and not admitting of being moved on the parts beneath it. The swelling in the axilla increases ; the disease occupies the whole mass of the absorbent glands there, and constitutes a firm solid tumor, which becomes fixed in the axilla in the same way as the schirrous breast itself is fixed on the chest. At the same period you very probably find that the lymphatic glands that are situated above the clavicle about the root of the neck, become enlarged ; and the progress of the affection that I have now described is attended with considerable increase in the sufferings of the patient. The pain that only took place occasionally becomes more constant and more severe, and the health of the patient begins to be affected. As soon as the glands enlarge above the clavicle, you will find that œdematous tumefaction takes place in the upper extremity ; in fact, the whole mass of the lymphatic glands connected with the arm, those in the axilla, and those above the clavicle, become the seat of disease. Hence the interstitial absorption of the limb is put a stop to, and œdematous tumefaction is the result. It sometimes increases to a great extent ; the limb augments in size ; and being accompanied with inflammatory action in the part, it occasions great suffering to the individual.

During the time that this change is going on, the health of the patient becomes considerably impaired. Sometimes, however, before the disease has gone to the state that I have mentioned, ulceration commences in the original tumor, and we find this take place in two ways. Sometimes the ulceration is superficial, and produces but little discharge, which however encrusts, so that there is a kind of scale formed on the surface of the part : this is more particularly the case where the integument is drawn in, in the form of the deep folds that I have mentioned, over the tumor. The ulceration comes on in the form of a crack at the bottom of one of these folds ; the discharge that takes place from it encrusts over the surface, so that the patient is hardly aware that ulceration has commenced ; but more commonly a nipple-like prominence (one or more) takes place on the surface of the tumor, and becomes of a red colour ; the tumor, which before was incompressibly hard, now begins to get soft in the situation of these prominences ; the skin becomes thinner and thinner, assuming a livid colour, and finally gives way ; and you generally find that a discharge, of an ichorous fetid nature, takes place from the surface. This is the most common form of carcinomatous ulceration. When the skin has given way, you find an



extensive ulceration taking place in the surface of the tumor, and a deep irregular excavation is speedily formed in it. The parts are removed by ulcerative absorption, and frequently there is the appearance of something similar to sloughing, by which the ulcerated cavity is increased—that is, a part of the surface of the sore assumes a kind of ash-coloured appearance, seems to lose its vitality, and separates like a slough. The discharge that takes place, whether the process is of one kind or the other, is never at all like pus—it is always thin ichor, and in general very fœtid. When the ulcer has become of considerable size, we usually find that the edge is elevated, and probably everted; there is a large rising margin, and considerable excavation in the centre; the bottom and sides are very irregular, sometimes presenting a bright red appearance, like granulations, sometimes presenting the ash-coloured sloughs that I have mentioned, and in the separation of these it not uncommonly happens that considerable bleeding occurs. This process of ulceration is attended with excessive, constant, burning pain. If the pain has been at all of a variable character before—that is, if the patient has occasionally been free from it—when this kind of ulceration takes place, the pain will be found to be constant and very severe.

When the complaint has arrived at this stage, the most unequivocal marks of serious constitutional affection are perceived. This has been called by some writers the state of cancerous *cachexia*;—the French particularly describe it. We find that the patient is pale, sallow, and has a kind of leaden appearance of the countenance—that there is considerable emaciation—that the pulse is accelerated, and the functions of the stomach and digestive organs disturbed; but the constant and severe pain renders the patient almost incapable of getting rest, and, in fact, a state more or less like that of hectic is produced. In this state it commonly happens that the breathing becomes affected—a difficulty of respiration comes on, cough occurs, and the patient sinks under the effect of the local disorder, and the consequent constitutional disturbance that it produces.

When we examine the part, we find that the natural structure of the mammary gland is no longer recognizable—it seems as if it had been removed, and in the place of it that peculiar texture that characterizes scirrhus, had been deposited. This texture consists of a very hard dense substance, which approaches in consistence almost to that of cartilage; when you cut through it with a knife, you experience the same sort of resistance that you do in cutting through cartilage—it has a kind of semi-transparency, a slightly yellow colour, and it is so

hard that we can make no impression at all upon it with the handle of the knife; it is quite homogeneous, very dense indeed, and if you cut thin portions of it, you see that it is semi-transparent. In this structure you will generally observe, however, on close inspection, that there is an intermixture of white points and streaks disseminated pretty generally through it.

[Mr. Lawrence here presented a preparation, and remarked that it was a specimen of a tumor which exhibited the character and appearance he had just mentioned; in which, if it were closely examined, notwithstanding the density of the texture, those white opaque streaks that he alluded to were distinctly recognizable.]

Sometimes the cancerous structure appears to us as a distinct and circumscribed tumor, the limits of which are well defined; but in other instances portions of this cancerous structure extend from the original seat of disease into the neighbouring parts, forming a striking contrast in appearance with the adipose substance which separates it from the other textures. The absorbent glands of the axilla assume a similar appearance—they seem to be converted into a texture very much like that of the original tumor.

In the early stage of the affection of the absorbents, it is not unlikely that the glands may be enlarged simply by irritation, just as the absorbents are by the irritation of ordinary disease in a part; but very soon we find that the glands have the same firm, incompressible hardness which belongs to the original tumor, and we find when we come to examine them after death, that they exhibit the same kind of dense or cartilaginous change of structure. However, the changes of structure that take place in cancer, are not confined, in cases that proceed to a fatal termination, to the parts that are the original seat of disease: when we come to examine the body, we find that the absorbent glands that are seated on the interior surface of the sternum, and anterior part of the mediastinum, are enlarged, and that they have undergone a scirrhus change. The absorbents from the breast partly take their course between the cartilages of the ribs to the inside of the chest, and thus it is that the glands become affected. On dissection we generally find that the cancerous tubercles, if we may so call them, are deposited in the lungs, and not uncommonly in the liver also. These are white and tolerably firm depositions, which are usually found in the greatest abundance immediately under the serous membrane of the lungs; but they are also disseminated throughout the substance of these organs, and not uncommonly similar depositions exist in considerable abundance through the whole texture of the liver. Other internal organs are likewise found occasionally to be the seat of the



disease, such as the uterus. Tubercular depositions of a schirrous kind have been seen connected with the mucous membrane of the stomach, and of the alimentary canal. In proof of the extensive mode in which the system is generally affected in the termination of these cases, I may observe that sometimes bones themselves are changed in their structure—that there is a partial removal of the earthy matter belonging to them, and a deposition in its stead of a kind of cancerous texture. This is found chiefly in cases where cancer has existed for a great length of time, and hence the long bones of the body have sometimes been broken by slight causes, such as turning in bed. The humerus and the thigh bone have in some instances been broken in cancerous patients under such circumstances. I remember seeing an old woman lying in bed, who had been affected with cancer for many years, and in whom the thigh was broken merely from turning in bed. This fracture occurred two or three months before I saw her, at which time she was still in bed with her broken thigh, and apparently no attempt on the part of nature at repairing the injury.—Not long ago there was a case in this hospital, not of a very old person—in fact, of a female under 50 years of age;—she was here some time, and when she first came, appeared stout, and robust in health. Nearly the whole of the sternum, in her case, was affected by cancerous disease. We had an opportunity of examining the parts after death, when it was found that the osseous substance of the sternum had in a great measure been removed, and a dense schirrous texture deposited in its place.—Cancerous tubercles have been known to form even in the brain. Such is the nature of the changes which take place in various internal parts of the body in the advanced stage of cancerous disease.

Now the progress of cancerous disease is not always the same—there are considerable varieties. I have mentioned the progress of it where it appears as a tumor affecting a small part of the mammary gland; but occasionally the same change appears in the entire gland at one and the same time—the whole gland becomes the seat of cancerous disease, instead of the affection being confined to a single small tumor. When the whole gland is thus the seat of the disease, it generally happens that it increases in size, or is swollen, but not considerably so. When, therefore, you see any large swelling of the breast, you may know perfectly well that this is not schirrus. Frequently, indeed, the gland, instead of being increased in size, is diminished—it undergoes a kind of shrinking from absorption. To use the expression employed by the French, sometimes it is affected with *hypertrophie*—that is, enlargement;—sometimes with *atrophie*—

that is, shrinking or diminution. It is in the latter case more particularly, where the shrinking and diminution occur, that the most extensive retraction of the nipple takes place.

Frequently in the progress of the affection, after the mammary gland itself has become the seat of disease generally, or when it has proceeded to ulceration, you have cancerous tubercles developed in the skin in the circumference of the gland—small lumps about the size of peas or beans—little hard knots in the skin. These frequently assume a red or livid colour, become extremely sensitive, very painful, and occasionally go into a state of ulceration. There are considerable varieties observed in the progress of the affection, as to the length of time that it occupies. Generally speaking, we find that it proceeds more rapidly in proportion as the subject is young: its progress is more slow in persons advanced in years. But there are also differences in its progress that we cannot ascribe to the age of the patient, but which seem to arise from some difference in the nature of the affection itself.

I have mentioned that the tumor commonly remains in an indolent state perhaps for several months—or it may even remain in that state for two or three years, or more. When the more active state has begun, we then find that it generally terminates fatally, at all events within two or three years; frequently it ends in a year, or little more, from the time that the more active growth has commenced. I had occasion to remove the mamma of a lady, who first perceived the existence of a tumor in her breast about Christmas 1823; and at the time that she discovered the lump there was also a swelling in the axilla—so that at one and the same time she found out the existence of the schirrus in her breast, and change in the state of the axillary glands, consequent thereon. I removed the part for her. When I came to perform the operation, however, I found a much more extensive disease in the axilla than I had expected when I commenced it; and I mention the circumstance to you as a caution. In these cases you find the whole chain of the axillary glands diseased, when perhaps you only expected to find a single gland enlarged. It is proper, as far as possible, to ascertain this point before you operate. I removed the breast and diseased axillary glands of this lady, but the disease returned in the part, and she died, as nearly as possible, in a year from the time when she had first discovered the tumor in her breast.

There are other instances in which the disease lasts a much longer time. I was consulted by a lady, about 60 years of age, a thin spare woman, who had got a cancerous affection of one breast; and the breast

so affected was smaller than the other, being shrunk in size. The tumor consisted of a small induration, and was completely fixed to the side of the chest. There was a deep fold of the skin crossing along the centre. This fold was about four inches in length, and at the deepest part about an inch and a half in depth, giving a most singular appearance to the part. There was a single gland diseased between the breast and the axilla. Now in this lady the disease had existed, apparently in that state, between six and eight years, and never gave her any pain all that time; and when I saw her it gave her no uneasiness.

A patient died in this hospital during the last summer, in whom disease of a decidedly cancerous nature had existed for about twenty years. In this patient, the whole of one breast, with the nipple, had been destroyed. The parts had been removed partly by absorption and by the cancerous ulceration which had attended it. The same affection had taken place and had nearly destroyed the mamma of the other side also. All the anterior part of the chest, from the clavicle down to the upper part of the abdomen, presented a sort of mass, rather of a carcinomatous substance than of muscle or mammary gland; but, in fact, there was nothing left but an irregular indurated mass, as hard as cartilage, and adhering to the integuments of the chest. When she first came to the hospital there was a large ulceration occupying the interval between the two breasts; there was much pain and inflammation about the parts, and the ulcer was in a foul state; but in other respects she was in good health, and you could not have said that there was any thing the matter with her. She looked well in the face—eating, drinking, and sleeping tolerably well. The application of leeches gave her very great relief; in fact so great, that during two or three months she staid in the hospital the sore almost completely cicatrized. She lost the pain in the chest, and regained her health; so that she went out of the hospital with the sore nearly healed, and she looked so well that a person seeing her dressed, and not knowing the state of her chest, would not have suspected that she had any disease whatever. I mention this to shew that although cancer is to be regarded in general as an incurable affection, yet, under certain circumstances, it does admit of being healed. This patient was out of the hospital some months, and returned again labouring under symptoms of acute inflammation of the chest. She was admitted for this complaint, and died in consequence of it: we had an opportunity of examining her after death. The disease had existed in this individual nearly twenty years. She was about fifty when she died, so that it had begun when she was about the age of

thirty. There was very considerable thickening of the pleura and of the upper part of the peritoneum. It would seem as if this long continued disease in the neighbourhood of these serous membranes had gradually extended to them by continuity, and produced considerable alteration of their structure—a sort of cancerous change of structure, with a granular and indurated surface. There was also in her case a cartilaginous thickening of the pericranium, covering a part of the skull, and a corresponding change of texture of the dura-mater.

In a healthy person the progress of the cancerous disease is often so slow that it does not materially shorten life. You may see a lump in the breast that is decidedly scirrhus—the integuments may become adherent to it, and both become adherent to the chest; a kind of superficial ulceration will take place, attended with slight encrustation; and this state of things will last for a number of years, and perhaps does not apparently accelerate the descent of the individual to the grave. I am acquainted with a lady whom I have seen various times for six or seven years, and who has got an affection of the breast most decidedly scirrhus; the glands of the axilla are enlarged, and there are a few slightly so on the side of the neck. She is now about eighty-four years of age, and I do not imagine that when she dies it will be of cancer. There are a number of instances where cancers last a great length of time, where they have begun at a late period of life.

Cancerous affection sometimes arises from external or accidental causes—such as a blow, or some other injury inflicted on the part; but more commonly they appear to arise spontaneously—that is, from internal causes, the nature and origin of which we cannot exactly trace. Last winter I had occasion to remove the breast of a female, in whom the disease had arisen from a blow; and it was an obvious and unequivocal example of the kind. This patient was the wife of a publican, who resided some miles from London. Her husband had been to town, and he brought back a cocoa-nut as a present for his wife; he tossed it to her to catch, but she did not succeed in her attempt to do this, and it struck her a severe blow on the breast. She was previously in good health, and a tolerably robust woman. The breast swelled in consequence of the blow, and became very painful; in fact she suffered so much locally and generally, that her medical attendant found it necessary to bleed her, and adopt other antiphlogistic treatment, under which the general swelling subsided, but the lump enlarged; and in consequence she came to town to consult me. I found a swelling of a hard nature, and an enlargement of the glands of the axilla. I prescribed means for her, on

the supposition of its being merely an induration or enlargement consequent on the injury, and supposed that it would go off. It did not do so, but assumed so decidedly a schirrous character that I recommended an operation. She consented to this, and I performed it; when, to my surprise, I found the whole chain of glands diseased, from the breast to the axilla, and up the side of the neck. The affection was schirrus, with all its characters strongly marked. I removed the breast last December (1828), and she continues well to the present time; so that the operation seems to have been successful.

It has been made a question, whether cancer was a local or constitutional disease? The meaning of the latter phrase is not very clear, or obvious. I rather think, however, we might say that cancer is at one period a local disease and at another a constitutional one. When we see a tumor forming in a small part of the mammary gland, in an individual otherwise perfectly healthy—when we see it not disturbing any function, producing no pain, causing no inconvenience of any kind—I think we must conceive there that the disease is simply confined to the part; and in that condition it is clearly a local disease. When we come to a more advanced period, in which we find the disease shewing itself more or less generally on various other parts of the body—when organs distant from that primarily affected become the seat of disease, we recognize the action of some more general influence upon the frame; and I think we may then fairly admit that cancer is a constitutional disease.

It is an important matter to distinguish cancer from other diseases, and more particularly to establish the diagnosis at an early period of the affection. It is at an early period that we have an opportunity of taking effectual means for the removal of cancer, if, in fact, such means can be taken at any period—a point of which some doubt may be entertained. The sooner, therefore, we can recognize the exact nature of the affection, the better chance we have of applying the means at a time when they may be expected to have the effect of removing the complaint.

It has been observed frequently, that several individuals of the same family have suffered from cancer. In this respect, cancer is like any other affection. Those natural peculiarities of the organs which are transmitted by generation, and which distinguish members of one family, may lead, under certain circumstances, to the occurrence of cancer in them, as they do to phthisis pulmonalis, to affections of the head, or any other forms of disease.

Now the female breast is subject to other enlargements, attended with more or less in-

duration, which, in a very early period, can hardly be distinguished from the enlargement of schirrus. At a very early period, the schirrous tumor perhaps is not immediately under the surface of the skin; it is covered by some part of the mammary gland, and by the integuments covering the breast; so that the sensation of incompressible hardness is not communicated to the hand, or it is not clearly recognizable at the very commencement. Then, as far as I know, the characters we must trust to are the unevenness of the surface—that is, the knotty kind of feel it presents—the sharp shooting or lancinating pains; and when these have taken place, the enlargement and the partially varicose state of the external vessels of the part. The age of the patient in some measure assists us too in the diagnosis; at all events it lends us a negative aid. Cancer does not occur in young subjects; it is very uncommon to see it in patients under thirty. You may very safely conclude, if there is swelling in the breast of an individual under thirty, that it is not schirrus. Sir Astley Cooper states, that, in his extensive practice, he has only seen two instances of true schirrus affecting the breasts of individuals under thirty. I have myself certainly seen the disease in an individual under thirty; for I remember removing the breast of a patient in this hospital under that age. She afterwards had the disease in the other breast, and she died of it pretty quickly. Usually it takes place between the ages of forty and fifty; very often about the period of the cessation of menstruation.

I come next to consider the *treatment* of cancer; and before entering upon this, it appears almost necessary to ask whether cancer—that is, whether schirrus in the first instance, and the ulcerative affection to which it leads subsequently, do admit of being cured at all? A general opinion prevails, that true carcinoma, the disease that has now been particularly described, does not, under any circumstances, admit of being cured. I believe, if the opinion of the most experienced persons were asked on this point, they would have no hesitation in saying that this affection cannot be cured; yet I do not know that we should be altogether justified in laying that position down quite broadly and positively. Such a position might lead us to rest contented, without using any means, in certain cases that perhaps might admit of benefit; it is a discouraging opinion to state in that broad way. In the work that I have mentioned to you, of Baron Boyer on Cancer, I find three rather singular facts, which, as far as they go, rather tend to throw some doubt upon the idea of cancer being incurable. He mentions two instances of tumors, considered to be schirrous, occurring in the breasts of females; in one of which the opinion of Pro-



fessor Dubois and that of M. Dupuytren was taken, as to the propriety of extirpating the tumors. Both of these gentlemen gave a decidedly unfavourable opinion of the operation, grounded on a belief that the disease was decidedly of a schirrous nature, and so far advanced that they thought relapse would be certain if the operation were performed,—and, in fact, they would not operate for that reason. Yet both these patients got perfectly well. I do not know that we can ascribe their cure to the means employed; however a remedy was employed, which has sometimes been considered a very powerful one. This was *cicuta—conium*—internally, and applied to the parts on poultices, sprinkled over with the powder of the same herb. This, I may observe, is a remedy which was proposed with great confidence for the cure of cancer, and has been spoken of as possessing great power. However I only state these facts to shew that tumors possessing, in the opinion of persons so eminent and so judicious as MM. Dubois and Dupuytren, all the characters of a schirrous affection, may get well. The third case that he mentions is also very interesting—it is that of a lady aged 48, whose mother died of cancer. She discovered a hard lump in her breast at the age of 48; the skin became adherent to it; it was a hard incompressible tumor, with darting pains. There arose from the surface of the tumor two nipple-like prominences, which assumed a red colour, and seemed as if they were on the point of ulceration, and going into a state of carcinoma. She was in a very bad state of health, and had great dread even of the application of leeches, much more of any thing like an operation, so that she avoided consulting any surgeon; at last, however, she took the opinion of M. Dupuytren. There were then present such symptoms as led him to say most decidedly that it was a schirrous affection, and that an operation was out of the question, for the disease would certainly return if it were performed; he also objected to the application of leeches in the neighbourhood of the tumor, fearing these might lead to cancerous ulceration, in consequence of their bites. Means of no particular consequence were employed to it locally. The tumor in this case did not increase, but kept for some time stationary, and then it seemed rather to diminish. The lady became subject to pains in the head, which at first were somewhat periodical; then they began to be continued, and were only relieved by the application of leeches to the temples. After this had continued for some time (the tumor during that period diminishing), she had an attack of apoplexy, with hemiplegia; she recovered from this, but had three or four other attacks subsequently, and in the fourth of these she died. The tumor by this time had become

reduced to the size of an apricot stone, whereas when M. Dupuytren saw her, it was the size of a hen's egg. The case was examined after death, and the cause of the apoplectic attack was found to be the formation of a cancerous tumor in one of the hemispheres of the brain, about the size of a walnut, of a hard, firm, schirrous texture, but loosely connected to the texture of the brain; indeed it seemed as if it had been floating in the brain, which was softened around it. On examining the part in the breast, there was merely a small shrunk tumor, about the size of an ordinary nut, remaining. In this case I think there can be no doubt but it was a genuine schirrous tumor, which had been diminished by absorption.

The consideration of the treatment we will postpone till the next lecture.

*to 33.*

## MODERN MEDICINE INFLUENCED BY MORBID ANATOMY:

### AN ORATION

Delivered on the 57th Anniversary of the Medical  
Society of London,

BY LEONARD STEWART, M.D. &c.

Vice-President of the Society.

ALL rational medicine is founded upon the observation of a certain constancy and identity in diseased conditions—on the frequent recurrence of a series of morbid phenomena which have been before noticed; for, if there were no such repetition—no such analogy to be traced—our acquaintance with disease would be continually beginning and ending with each individual case; there could be no general or systematic rules by which to guide our opinion or our conduct—no permanent circumstance to connect the present with the past and the future; all pathology would be consequently purely conjectural—all practice, of necessity also, blind and empirical. And yet it is true, at the same time, that no two cases, on simple comparison, are precisely alike. Even where diseases are clearly made out and appreciated, there is some new proportion in their elements, or some difference, in kind or degree, in their circumstances, which prevents our regarding any one of these complex states as the exact duplicate of another. Nay, the very existence of malady, considered as a matter of separate study and investigation, depends upon a departure from the indefinite and fluctuating bounds of a healthy standard; between which, however, and

the many preternatural modes into which the living system may pass, there exists no accurate line of demarcation. When, then, we are told, in the same breath, of the infinite variation and complication in the particulars of disease, and the absolute necessity for method and arrangement, it becomes an important question to determine, what contrivance can ever reconcile propositions so discordant—what are the characteristic and permanent features of analogous diseases—and which of the associated medical sciences is to furnish us with the true test by which we may know them upon their occasional reappearance? Between these wide and contradictory extremes have been placed the many systems of pathological writers. Finding the impossibility of retaining in the memory an innumerable variety of confused and undigested facts, and convinced that the consideration of isolated cases, whether falling under personal inspection, or recorded in books, would lead to no practical result, they have proceeded to *generalize*—that is, to distinguish among a number of diseases that common and pervading ingredient which renders certain portions of them proper to be grouped into families or classes; and to invent, on this supposed resemblance, rules for judging of similar cases, and treating them in future. This task of forming a coherent abstract from an infinity of loose and fleeting materials, has been the favourite task of the medical world in all ages. Its full attainment has been, however, beyond the grasp of the most powerful minds. But so great is its importance, that many, who have laboured at its accomplishment, have, by the mere attempt, perpetuated their names, and have been directly or indirectly serviceable; for in medicine the conflict of opinions has always tended to elicit truth, and here, as in other pursuits, there is a necessary and constant supremacy of principles over details.

At different periods of the growth of medical science, there has been invariably some one branch of this comprehensive study, or some favourite system, in the ascendant; and the revolutions in professional history have been so frequent and so complete, that each name has ruled in its turn, and every possible scheme has “tasted of empire.”

The school of Hippocrates, with which our era generally begins, taught chiefly the importance of observation and comparison. And even to this day there is considerable deference paid to its immortal founder, as well as to Sydenham, Heberden, and others of its disciples, when their discernment, and good sense, and experience, are considered apart from their deficiency of information upon questions of anatomy and physiology, and other scientific points, which have been more amply illustrated by modern teachers. The dogmatism of the Galenists and alche-

mists—the ill-advised attempts of many other speculators of the mathematical, mechanical, and chemical schools, to demonstrate the application of their own principles to physiological and pathological phenomena, are, on the other hand, remembered only as so many illustrations of this approved maxim, that “the most ingenious way of becoming foolish is by a system; and the surest method to prevent good sense, is to set up something in the room of it.”

The cultivation of anatomy in its various branches—descriptive, general, comparative, pathological—forms the most characteristic feature of modern medicine. The information obtained by studying the physical signs of malady during life, and by collating these with the alterations of structure which are discovered upon dissection, is of a nature more fixed and tangible than any which can be gained from a general observation of symptoms and constitutional influences. With a just prepossession, then, in favour of this, the best foundation of pathological opinion, we may naturally ask, repeating the question which some time back arrested us, will morbid anatomy give us the only basis on which to re-erect our schemes of pathology and practice?

Let it be understood: my inquiry does not relate to the importance and scientific character of researches into the anatomical mechanism of disease. That man must be strangely blind to the value of truth who should call this in question. Neither will this opportunity be taken to string together a number of common-place observations in praise of what, all the world knows, does not, from its indispensable utility, stand in need of such eulogy. But my object is to offer some speculations as to the extent to which opinion has been modified by the cultivation of pathological anatomy;—to inquire whether an entirely new face be given to medicine by this mode of investigating disease? whether, as has been asserted, morbid anatomy bears the same relation to pathology that chemistry does to mineralogy, bringing to light new elements, and establishing new connexions, and throwing into the shade all notions not verified by this more accurate test?

To a certain extent this is doubtless the case. Many lesions of structure are concealed, and even unsuspected, till they are revealed by anatomical research. What are called accidental membranes and adventitious substances, many new and preternatural formations, various interstitial depositions of fluid, certain tubercular maladies, as *melanosis*, and the whole tribe of hydatids, are so many additions to regular organization, completely *parasitic*; and they interfere so little with ordinary function, and are endowed with so little sensibility, that their existence is not known, in many instances,

till upon dissection. Besides, in other cases, where disease is ascertained during life, we are not made acquainted with its full extent, and various complications, till we call in the aid of morbid anatomy. In this way a world of pathological intelligence is opened to modern investigation. To suppose that all the evidence afforded by anatomical researches is merely posthumous—to fancy that pathological anatomy does not tend to discover the disease in any instance, but merely the “blight and blackening which it leaves behind,” would be, however, in glaring opposition to daily experience. On the contrary, there are many occasions where the information obtained by examining disorganized structure, and brought to bear upon new cases, is of such paramount importance during life that a colour is given to the expectations of those partial disciples of this school who have thought that morbid anatomy offered the only clue to the proper knowledge of disease, and that its assiduous study would speedily regenerate the whole system of medicine. For instance, in mechanical injuries—as fracture, or in obstructions—as hernia, the mischief is appreciated by the precise situation and form of disruption or displacement. Here the cause of suffering is clear and definite, the field of investigation and experiment comparatively limited and fixed. With due allowance, then, for differences of constitutional disturbance, the removal of disease, and the disappearance of anatomical lesion, proceed *pari passu*. While on the other hand, in incurable cases, the condition of the part after death bears the most satisfactory testimony to its impaired function and preternatural position. In some of the structural maladies of the eye, and in many of the accidental difficulties attendant upon gestation and delivery, the phenomena of disease are of the nature of demonstrable facts; and until attention be turned to the physical and mechanical character of these matters, all general considerations are of no avail. Again, in topical inflammations—in the maladies of definite regions and organs, as of the pelvic viscera, the circulating and respiratory apparatus, the cultivation of morbid anatomy, together with a careful linking together of physical signs and symptoms, has led to all our scientific knowledge; and we appeal to dissection for a sure corroboration of our clinical predictions. The investigation of the diseases of blood-vessels, which has formed a distinguished part of this study, has been found to explain many obscure points of medical and surgical pathology. It has not escaped the notice of some critics, however, that those who have devoted their attention to the functions and disorders of these organs, have shewn a disposition to isolate them from the surrounding mass of disease in which they may be implicated,

and to ascribe to them an independent agency in the generation of malady not warranted by our ordinary doctrines of the consentaneous action of vital tissues. The physiology and pathology of the brain and nerves have attracted the attention of the most gifted men of the day. While, however, their investigations have yielded an abundant harvest of intelligence of the most interesting and useful kind, it must be allowed that very opposite results have been obtained by their experiments and researches, and that much yet remains to be developed and ascertained.

But, without bounding our notions by these more simple and intelligible positions of disease, we may at once broadly and frankly allow, that in every case of malady, however fleeting and ephemeral, there is of necessity some preternatural state of organs or tissues; that even what are called functional and symptomatic disorders, argue some modification of physical condition. When, however, we would endeavour to determine what this preternatural condition really is, and what are its causes, it must be obvious to any person of reflection that many circumstances must be considered which cannot be made clear by anatomical inspection. Some of the more palpable organic lesions may be detected by the knife; but dissection must not be expected to discover the foundation of maladies characterized by totally different phenomena. How can anatomical researches acquaint us with the alterations in the fluids, the chemical reactions, the various electrical and galvanic operations, the relations, both physical and moral, with external agents, and the many familiar but evanescent changes which are called vital, and of which no physical test can take cognizance? These operations are continually going on, and they conspire to defeat any attempt to measure all diseases by the application of one universal rule. Indeed, in those cases which are acknowledged to be the most favourable to an exact and accurate plan of analysis, there are frequently so many complications, and so many sources of fallacy, that we should be extremely cautious in placing faith in any sweeping scheme which pretends to simplify all possible occurrences.

I am inclined, indeed, to go further, and to question whether this analytical method of investigation be in reality the true road to the due appreciation of many diseases. Analysis may be carried too far, at least for pathological uses. In systems of general anatomy, we see it trace all the tissues to one or two primary elements; so simple, that they cease to represent the modified structure of the organs which are variously constructed from these fundamental materials. Again, these same tissues, when examined chemically, yield merely gases in varying proportions; and pass from our



view as the agents of vital functions. Their proper organic character is destroyed, and in their new shape we cannot recognize them. So also there are results obtained by analysing very closely the anatomical mechanism of some diseases, which may be called scientific, but which have no similitude with the tumult and activity of living pathological phenomena.

On the contrary, many morbid conditions can be made intelligible only by viewing them as a *whole*—by enumerating all their elements—by associating their early history and progress—and by considering their many relations with extraneous and moral agents. In the large family of spasmodic, intermittent, and periodical complaints, there is frequently either no trace of organic mischief, or this is so much the same in all cases, however opposite, so subordinate to other considerations, and so unsatisfactory as an explanation of the peculiar and mutable character of the maladies during life, that we are naturally disposed to attend to more liberal and extended views of disease. In hypochondriasis, hysteria, and epilepsy, the true condition cannot always be appreciated by a direct inspection of physical signs, without calling upon the testimony of the past, and accumulating every concurrent circumstance. This is notoriously the case, too, with insanity, which, in many instances, cannot be seen, and measured, and defined, but yet can be practically judged of and appreciated. We can give no exact detail of its mechanism, but are not on that account less able to feel and describe its nature and character.

Again, how important to the true discernment of delirium tremens and of puerperal mania is an acquaintance with predisposing and physiological causes! How essential to diagnosis in gastrodynia, gout, neuralgia, is a departure from routine notions, and in distinguishing common from rheumatic and specific inflammations and malignant taints!

In many diseases of the skin, too, where so much is displayed to the view, it is impossible to decide what to think, or what to do, without careful research into their occult causes; and yet the local obstruction of this important and constantly active apparatus is as much an *organic lesion* as the affections of a mucous, or serous, or any other tissue.

There is another difficulty: a disease may be latent, or imperfectly developed—and we must view it through the medium of its connexion with contemporaneous events. We occasionally find, too, that out of a succession of cases even (say of small-pox, or scarlatina), no one instance shall fairly combine all the characteristic ingredients which class under any established nosological definition. In every individual case some one element will be wanting, some anomaly in the accus-

tomed manifestation of the disease will occur, or some complication with which we are not familiar. So that, in default of a due assemblage of symptoms, or when there are more present than we consider proper to the intrinsic disease, we have to recur to what we recollect of other better examples—to rectify perception by conception—to bear in mind an ideal model, which is not fully represented by any one actual case, but requires selection and combination from others, before the proper association of signs and tokens be presented to the judgment.

I am at the same time aware that, in our art at least, this disposition to create a perfect whole out of a number of disjointed parts, and to give unity and coherence in theory to what is scattered and irregular in reality, has often led to the most arbitrary, artificial, and unsubstantial hypotheses—that is to say, where it has been in excess, and indulged without continual recurrence to fact and observation. And among other errors, it has engendered the fancy that there were separate principles or essences of disease! But I think we may set at rest this notion, and at the same time illustrate the proper mode of embodying the fleeting elements of some maladies, by referring to our opinions concerning sleep, puberty, old age, and other modes and modifications of the human system. We talk familiarly of sleep, of puberty, of old age, in a collective sense; we observe their symptoms, their progress, their termination, their whole character; we allow that they modify the entire economy, physical and moral; but we never (except in poetry) suppose a distinct entity or essence of either. In the same way we speak of fever, of small-pox, of insanity, in the aggregate; but without considering them under the controul of an abstract power or independent principle, apart from general vitality.

Now this mode of reasoning *upon cumulative evidence*, which I have endeavoured to illustrate and ventured to inculcate, is directly the reverse of that called analysis. It may be truly designated synthesis—a placing together of parts.

There appears to be, in the minds of some persons, a strange aversion to admit a due and sufficient variety in the primary causes and intrinsic characters of diseases. The advocates of the exclusive systems of irritation or congestion, of inflammation, or of organic lesion, are not satisfied with being partial to a favourite scheme, but they must be intolerant to all rival views; and, in twisting facts to illustrate their own plans—for all parties appeal to facts—we see them continually regarding an isolated part of any composite morbid condition as if it were the whole, and installing a secondary and subordinate effect into the place of a cause. The attempts, however, to give one invariable

explanation of the most complicated diseases, and to enlist the most opposite conditions under one universal designation, are as absurd and as impracticable as would be a proposal to allow but one sense, or one passion!

In endeavouring to simplify our notions of the secret mechanism of some diseases, we lose sight of their broad and striking peculiarities. We get at the dry skeleton of pathology, without the clothing and life of clinical observation. It is no satisfactory explanation of the special differences among maladies, to learn that the nerves and blood-vessels are the universal agents in their production. What do propositions so naked, and abstract, and indiscriminating, amount to? They may be true, but they are of no avail. They are not sufficiently descriptive and circumstantial to be interesting and useful. They are like the dates and names of historical events, apart from the actions and characters of the personages. Even the terms sympathy, association of function and sensation, and other familiar abstractions, in reality explain nothing; being simply the enunciation of certain primitive facts, which are themselves to be accounted for. Inflammation, again, is a complex condition, brought about (or set up, as we say) by the simultaneous impulse of many controlling agents. In order to explain its modifications, —to understand why, in measles, it constantly prefers the Schneiderian membrane, and in scarlatina the pharynx; and is so variously directed and characterized in other diseases—we must admit the prior agency of special laws of the economy; and acknowledge inflammation to be, not a primary cause, but a morbid effect, generated by agents already in operation.

The practical views which we must take of diseases are various. We observe in cramp, and in urticaria, great pain and intolerable suffering suddenly coming on, and as suddenly subsiding. We have, on the other hand, scrofula and cancer, making of the whole of life "one long disease." We see calculus arising from some peculiar vital constitution, becoming a chemical disorder of secretion, and ending in a mechanical obstruction to healthy function. In hydrophobia we have to observe the appalling effects of an insidious imperceptible agent; and in endemic fevers, of a diffused influence, or malaria: but this malaria, or this venom, be it remembered, has never yet been detected by the most subtle mechanical or chemical contrivance. It owes its inferred existence to pure reason, or induction. At other times, the palpable cause of mischief is found to be the presence of worms, of animalcules, of biliary or stercoraceous concretions.

Plague, scurvy, cachectic maladies, and broken-down constitutions, exhibit a de-

range of many of the elements of our frame, so general that we can with difficulty fix upon any peculiar and exclusive feature; while in cataract it is merely the loss of one physical property (which is of no value but in the eye—which might never even be recognized out of the axis of vision) that destroys natural function, and leads to great consequent inconvenience. In wounds and topical injuries, it would be glaringly absurd to seek for general predispositions and distant causes of suffering, when the mischief lies before us in a tangible shape. But surely it would be quite as wrong; in many cases of hereditary malignant and contagious disorders, to overlook peculiarity of temperament and specific poisons; because the morbid lesions, which are locally developed in certain constitutional maladies, are but a small part of the whole diathesis. It not unfrequently happens, that a lurking contagion or hereditary taint, which is masked in one individual patient, or in one generation, may yet reappear in others, perfectly well-marked and developed; and we must, in such cases, consider the morbid tendency, diffused universally over the economy, or pervading certain tissues, as well as the occasional and accidental phenomena, which give an outward and visible sign of its existence. Indeed, after having gained so much in surgical matters, by advancing from the partial scrutiny of local diseases to the consideration of general physiological laws, and by mounting from effects to causes—it would be to surrender our advantage, were we, in medical researches, to retrograde and rivet our attention solely upon the traces and mechanism of disease;—this would be to mistake morbid anatomy for the entire science of pathology.

We are thus driven to recognize several established differences in the nature of maladies, both with respect to their intrinsic causes and to their aggregate character. It is difficult, and perhaps impossible, to determine with precision the proper number of classes to which all individual cases may be referred. This same difficulty exists in forming schemes of general anatomy, where writers have always disagreed as to the due number of elementary tissues: it has been found, in tracing the original varieties of the human race, and in referring particular tribes to their original source; also in analyzing the primitive faculties of the mind—about which no two metaphysicians are agreed; indeed, in all branches of natural history and throughout all science, whenever such an attempt is made, some points are universally recognized as clear and satisfactory, while there are others about which we hesitate and differ. We know that, in all vital phenomena, there is much more variation and complication than in purely physical occurrences; but yet, though our notions of dis-

ease are indefinite, and the parallel between any two cases never rigid, yet we are justified in tracing analogies between them, and in separating them into groups, and looking out for their continual reappearance, as much as we are with regard to the approximations and contrasts of colours, tastes, and musical sounds. Therefore many of the imperfect nosological schemes which have been proposed, while they have excited derision, by classing together disorders totally opposite in their nature, have at the same time been well-founded in other respects. So that, while we fairly indulge our laughter at the incongruous portions, this very impression of their absurdity allows an inference indirect, but legitimate—that there is at bottom felt to exist a foundation for a true and natural arrangement, which, if developed with skill and judgment, would be readily understood and acknowledged. Indeed it is this natural foundation of constancy and renewal in the peculiarities of diseases, which enables us to recognize, as just and faithful representations, many of the faint outlines and physiognomical sketches of maladies which our predecessors have drawn without much acquaintance with the scientific details of anatomy and physiology; and these, like many of the maxims and proverbs of remote ages, being grounded on general and imperishable truths, will always retain their value; while new illustrations, and more exquisite refinements, are continually adding to the primitive rules.

But any kind of testimony respecting the by-gone history of diseases, and shewing their identity or diversity at successive periods, is important; for “not to know (as a familiar quotation from Cicero says) what has been transacted in former times, is to remain always a child.” The information given by primitive writers, as to the appearance long ago of diseases familiar in our day, and as to the contradictory notions which have been entertained, at different epochs, concerning their nature and origin—as, for instance, about syphilis and small-pox; the accounts which we occasionally have of the varying type of epidemic maladies, of the spread of disorders considered endemic to new regions, and of the comparative fatality of plagues and pestilences in camps, gaols, hospitals, ships, and new colonies; the records of statistical medicine, which manifest the connexion between diseases and different localities, domestic habits, and political institutions;—all comprehensive reviews of this kind, tend to promote sound and just reasoning, and to keep within bounds all sanguine attempts to extend partial systems beyond their due limits; while, by accumulating facts and opinions, and by linking together individual and scattered occurrences, they enlarge and strengthen the basis upon which our practical conclusions

rest; and give a stability to the whole fabric of pathology, which in its subdivisions cannot be obtained.

In this way medicine rises, from being a conjectural art, to rank on a level with the more determinate sciences; the particulars being indefinite and varying, the general results regular and constant.

But however interesting the study of diseases might be, as a branch of natural history, and however necessary to the proper appreciation and discrimination of such preternatural conditions we might consider the cultivation of morbid anatomy; yet this portion of our professional studies would never have attained to the rank which it holds in the estimation of the candid and enlightened, were it not for the intimate relation between pathology and therapeutics.

Enough has been said already of a disposition to continuance in pathological notions, notwithstanding occasional fluctuations in opinion, and partial improvements in research; and I could quote very good authority to tell you that, in therapeutics, there has been still greater constancy and adherence to ancient methods; but, upon reflection, I am myself disposed to think differently. Nothing, indeed, could be made to appear more contradictory and inexplicable than an exposition of the countless multitude of remedies which have at different periods risen into esteem, become widely employed, and have then been forgotten; but it would be a fruitless, and indeed melancholy task, to marshal in opposition the hosts of absurd theories and ignorant practices—to compare their rival uselessness, and determine their precedence in folly. It will better suit the purposes of this investigation to mark the constant parallel which has existed in the progressive development and improvement of systematic and practical medicine. Remedies have been for ages proposed for mere symptoms, without an attempt even to remove the intrinsic causes of disease; and have been supposed to act with a peculiar and specific force upon morbid phenomena; which scientific investigation has discovered to be mere ingredients in the sum of a composite disorder;—and this short-sighted and superficial treatment has prevailed in internal as well as in external maladies. On the other hand, and contrasted with this fault, we find a corresponding rage for simplicity. There have been as many sweeping and uncompromising schemes in practice as in theory; and in the same way these are always fabricated by forgetting causes, confounding opposite conditions, and overlooking indications of cure held out to us in many characteristic ways.

But it is not as companions in error and humiliation alone that theory and experiment have been joined: the same light which has been shed upon anatomical, physiological,



and pathological researches, has reflected its influence upon therapeutics; and, in a great share of morbid conditions, the *methodus medendi* has been rendered more clear, and the cure more certain.

Within the department of the physician, the relation between the natural or modified functions of the various tissues and organs, and the curability of disease, has been successfully investigated and very generally acted upon. In surgery and in midwifery, the connexion between scientific knowledge and remedial power has been still more direct and available. But from no part of our profession is the mortifying but just opprobrium removed—that, on too many occasions, our researches serve, indeed, to shew us the character and progress of malady, but do not, in an equal degree, disclose the means for its prevention and cure.

The continual reaction of experiment upon theory, and the intimate relation between pathology and therapeutics, being then recognized, and their co-operation both for good and evil illustrated, we can explain the influence of rational and enlightened medicine, founded upon anatomy and physiology, in hastening the downfall of many specifics, and in putting out of fashion many long-established remedial agents.

We know that one of the avowed objects of medical surgery is to diminish the number of operations, and to simplify cumbrous apparatus and complicated manipulations; and there is no question that, throughout the healing art, the habit of tracing the natural history and tendency, and termination of diseases, goes to weaken our reliance upon numerous medicaments which have been in their day held in wondrous estimation. A trivial acquaintance even with morbid anatomy will induce us to relinquish, in certain cases of organic lesion, all expectation of restoring original structure. Habit and prejudice may, however, so long associate the administration of certain drugs, or the employment of certain instruments, with familiar diseases, that their disuse shall come to be regarded, by the ignorant and bigotted, as a surrender of power and a neglect of opportunity. But by those who are sufficiently used to weigh the force of physiological laws and pathological conditions, against the transient and trifling effort of superficial and misdirected plans of cure, it will not be allowed that any really useful agent, or any strictly necessary operation, was ever banished from the medical commonwealth. When our researches lead us to refer certain painful affections to the trunks of nerves, or to their origin in the brain or spinal cord, we are not guilty of neglect in slighting many popular applications to their sentient extremities. If we treat with contempt a variety of cordials and nervous medicines (which both experience and science have proved to

be inefficient), we are not thereby discountenancing any cure for organic obstructions to the circulating apparatus; nor do we, in forgetting to employ various mucilages and gums (which could at best but coat the surface of the mucous membranes), abandon any effectual cure for tubercular phthisis.

Many of the erroneous notions which have prevailed, concerning the power of remedies and the necessity for operations, have grown up from the popular custom of attaching importance to the drug or to the remedial agent, without regarding the variously combined circumstances which call for its employment; and the same error has pervaded many fixed plans of diet. Every day, however, teaches us the folly of imputing a virtue to the means of cure independent of the inherent capacity of the vital condition to turn it to account; every day teaches us to expect nothing from the seed, when the soil is not fitted to receive it. But here a reflection arises, as to the due extent of our allegiance to philosophical or scientific schemes of practice. Some doubt may be very justly entertained, even by those who are the most anxious to extend the dominion of reason and logical induction, whether the habit of adapting means to ends, and of calculating results from established analogies, may not beget a disposition to scruple the employment of what is useful, merely because its mode of operation is not clear, and to strain after an explanation on occasions, when it cannot, in the nature of things, be obtained, and we must be content simply to observe events; whether we are not apt to forget that the immediate and specific action of all remedies upon our organs is a thing of fact, and not of reason and contrivance?

Experimental medicine, the most ancient, and, all things considered, the most extensive division of our art, is the common ground where men of all opinions and all degrees of acquirement, must at times meet. And it is mortifying to one who has spent his life in scientific research, and grown old in the upright and rational use of professional experience, to be occasionally put on the same level with the youngest practitioner, and jostled indiscriminately by quacks. However, most things in this world have sprung, not from science, but necessity. If, indeed, one consider how few remedies, even the most familiar, act intelligibly and directly, and how many may be resolved into distant counter-irritants and fancied contra-stimulants, that they all transmit their power through a medium which is not the passive and faithful recipient of impressions, but is frequently active in defeating or modifying their influence,—if one scrutinize very closely the shifting and contradictory results of most experiments made upon vital organs, and be not content to receive as a satisfactory explanation what he frequently

suspects to be merely a coincidence of unconnected facts, such a one will not wonder at the occasional disappointments to which the most experienced are at times subjected, or at the disparity of benefit arising from the best-advised efforts.

Yet, with every allowance for the uncertainty in which remedial agency must ever be involved, and with every wish to encourage the extension of free and unshackled inquiry, we may with perfect fairness decide, that, even in those cases where the ultimate appeal is made to experiment, much may be done by scientific investigation and judicious preparation, towards narrowing the field of operation, and selecting a propitious moment for trial. Without alluding to the more established professional means of cure, this position could be exemplified by the production of innumerable examples, in which the rational employment of *specifics* even would be contrasted with their indiscriminate administration. But I will take as a mere illustration what we hear of the *ergot of rye*. If the reputation of this new therapeutic agent be well founded, and the testimony of many practical men in its favour be received, it would appear to be gifted with a peculiar, unexplained, and *specific* power over the uterus, which renders it, without any insight at all into its *modus operandi*, of the highest utility in the hands of the skilful, under a certain combination of circumstances, and controlled by the presiding influence of prudence and integrity; but when not used, but abused, by those who are unacquainted with physiological and pathological conditions, ignorant of anatomy, and untaught by clinical experience—who have neither the subdued and practical intelligence, nor the scrupulous fidelity of the true physician, is liable to become a pernicious and destructive instrument.

As to the popular reproaches which have been so frequently cast upon the more *orthodox* of our class, concerning jealousy of innovators, and unwillingness to adopt efficient remedies merely because they did not enjoy the sanction of authority, these are daily becoming more inapplicable. Indeed, the ready and universal promulgation of vaccination by the educated and enlightened, in opposition to the most inveterate prejudices of the vulgar, would alone be sufficient to repel from our profession the charge of undue adherence to antiquated notions. Perhaps we may go further, and say, that in our day, the sin of bigotry and partiality lies really at the door of the empirical practitioners, who are commonly attached with blind and engrossing confidence to a single system or mode of cure, and prove on acquaintance to be, as it is called, “people of one idea,” which they are eternally pursuing, and investing with false and exaggerated

airs of importance. How many quacks would go to the composition of an accomplished eclectic practitioner, I have never attempted to calculate. But it appears certain that we are less scrupulous about the source of knowledge or power, than about its practical value. Indeed, the liberality of the profession with regard to new remedies, very much approaches the easy carelessness of the polytheists of the Augustan age on the score of new religions. We have, like them, our old and tried modes—our household gods; but as these are not all-powerful, we are very ready to enlist the divinities of all other countries into our calendar, and go where we may, to exchange our forms for others which may prove more efficacious. It is true that the miraculous pretensions of certain idols, which some enthusiasts have called upon us to worship, have at times been treated rather unceremoniously; this disrespect has, however, been excited not by their novelty, but by their impotence!

But after all is considered that reason can suggest, or that quackery dare risk in the way of relief to suffering, there remains a large proportion of cases where we are equally deserted by theory, and compelled to relinquish experiment, which innumerable trials in analogous examples have proved to be of no avail; where neither science nor experience uphold us, and we drop into the Dead Sea of expectant medicine. This dull and sluggish element, which has engulfed so many sanguine schemes, is looked upon with a natural feeling of dislike by the ardent and enthusiastic; and yet, in too many instances, “to this conclusion we must come at last.” However, I shall endeavour to shew that there are considerations which may reconcile us to the occasional submission of our aspiring endeavours unto the irresistible sway of natural laws; at any rate, I shall satisfy you that in making a necessary concession, it is more agreeable to be led by reason than driven by despair.

There is this great distinction to be made by those who practise faithfully, which, without being definite and exact, is sufficiently broad and intelligible to warrant us in paying it attention. In many cases of malady, the system may be regarded as the recipient of morbid impressions from some external agent, or is passive under the infliction of an injury which is accidental and extraneous; or, at any rate, the constitutional disturbance which may arise is rather a reaction or consequence of the original impulse; while in the generation of other diseases the intrinsic elements of the frame seem spontaneously active; these are set up and developed in a manner allied to the natural revolutions of the animal economy. The former class, or accidental complaints, may be com-

pared to the invasions of a state by a foreign foe, which are irregular and unexpected occurrences; while constitutional diseases are like civil tumults, depending upon latent causes, and proceeding as a necessary consequence of the growth and progress of a nation, and partaking of the popular condition and character. We know these last to be so entirely concomitant with the established functions and natural changes of the system, that they can only be understood by constant reference to primary physiological laws. We find a gradation from varieties of race and temperament, differences of constitution, diathesis, idiosyncrasy, habitual mode of life, and prevailing passion, or bent of mind, till there is but a step to actual disease. And then maladies are grouped according to different ages and functional periods, as the disorders of infancy and dentition, of childhood, puberty, of gestation, and the change of life in females, and, in both sexes, of old age; there are, in short, so many links between intrinsic or constitutional complaints, and the unavoidable events of our physical and moral existence, that they can never be properly contemplated apart.

Now granting that much may be done by scientific measures, and even by empiricism, in accidental diseases and injuries, we must conclude that there are others where all abrupt interference with spontaneous natural processes is equally forbidden by reason and experience. But if there remain in the breast of any a feeling of dissatisfaction that on so many occasions we are compelled to caution and inactivity—that the character of philosophical medicine is so frequently negative, we may remind them that our profession is part of human nature, and must consequently ever partake intimately of its obscurity, uncertainty, and littleness. “It must be remembered,” says Dr. Johnson, “that life consists not of a series of illustrious actions or elegant enjoyments; the greater part of our time passes in compliance with necessities, in the performance of daily duties, in the removal of small inconveniences, in the procurement of petty pleasures; and we are well or ill at ease, as the main stream of life glides on smoothly, or is ruffled by small obstacles and frequent interruptions.” Reflecting on this, educated men of good sense and integrity will not lend themselves to the plans of extravagant pretension and ignorant meddling, by which quacks exist. Indeed we know, from what goes on in the world, that the only persons who engage to cure all diseases, are precisely those who know least about them. But while conscientious practitioners lay no claim to such unlawful and spurious titles to consideration, they have an ample inheritance of usefulness in the wide field of pro-

phylactic, dietetic, and palliative medicine. In no way have we added more to our true power than by relinquishing violent and ill-advised practices, in favour of modes of cure “by the first intention,” as it is called, and by the skilful management of general physical agents and moral influences, which “do good by stealth.” The information which is daily pouring in upon us, as to the secret but sure operation of climate, of habitual mode of life, of social and political circumstances, and of the change of these circumstances upon individuals and communities; the close alliance which is continually forming between our profession and the many sciences and useful arts which illustrate the nature of man, develop his faculties, improve his condition, or mitigate his sufferings;—all combine to gain for us sure and legitimate advantages, and to extend the beneficent influence of sober reason.

I have endeavoured, in this imperfect outline, to point out the existence in medicine of two great conflicting principles—one of analogy and constancy in aggregate events, and one of infinite variety and fluctuation in details; and to illustrate the necessity for those technical fictions by which they are reconciled. I have attempted to illustrate the analytical and the synthetical modes of appreciating disease, and have considered that general arrangements and descriptions forward us, while universal indiscriminating schemes carry us back to the original chaos; that the importance of morbid anatomy, as an auxiliary study, is too generally acknowledged to require argument; but that, while its cultivation, associated with physiology and pathology, is obviously necessary to the elucidation of some diseases, it is, when proposed as a rigid test of others, not only insufficient in point of fact, but unphilosophical in its aim; because no localization can be attempted of those maladies which are diffused, and because no single method of investigation can embrace all the elements and relations of the more complex disorders.

I have concluded that our profession, moving forward with the general impulse of the age, shews a disposition to turn every science and every system to practical account, yet rebels against all attempts to enslave it to any one in particular; but that, having learnt caution from the past, it advances, by the aid of present intelligence, to unlimited discovery and improvement—*Nil actum reputans dum quid superesset agendum.*



ON SEVERAL AFFECTIONS OF THE  
LARGE INTESTINE.

BY PHILALETES.

No. II.

*To the Editor of the London Medical  
Gazette.*

SIR,

In the present paper I purpose describing, in a very cursory manner, several affections of the large intestine. These are, 1. *Inflammation of the appendix vermiformis cæci, from calculus in that organ, with its fatal consequences.* 2. *Inflammation seated in the region of the sigmoid flexure of the colon, with symptoms of stricture, and its cure by mercury.* 3. *Symptoms of stricture of the rectum, leading to the erroneous and injurious use of the bougie;* 4. *and lastly, an affection of the bowels, arising from thread, or the fibrous and indigestible parts of vegetables, inadvertently swallowed.*

I. Several years ago I was consulted by an anxious father in the case of his son, a little boy, about 12 years of age. He had suffered for some days from pain seated in the region of the appendix vermiformis cæci. He had been bled from the arm, and leeches had been applied, but in vain. He seemed to bear the loss of blood very ill. On examination I found a distinct tumor, exceedingly tender on pressure. The pulse was frequent; there was much complaint of debility. These symptoms continued, and the little patient sank rather rapidly.

On examination after death, coagulable lymph was found poured out over the surface of the hollow of the left ilium, and the appendix vermiformis cæci was seen to be enlarged and charged with blood of a venous hue. On opening this organ, a concretion was discovered embedded on its narrow canal; and on further examination, the nucleus of this concretion was found to be a small plumb-stone.

In another case, of a precisely similar character, the nucleus was a common pin; and in a case published many years ago (I believe by Dr. Briggs, of Liverpool), in the Medical and Surgical Journal of Edinburgh, the nucleus was a tooth, which the patient had doubtless

swallowed on its becoming loose and detached from its socket.

I should add to these remarks, that a similar case was attended recently by Dr. Stephen Hall, of Walworth, who was so kind as to present me with the concretion; and for a chemical examination of it I am indebted to Dr. Prout. That gentleman observes, "the concretion you were kind enough to send me, consists essentially of the phosphate of lime and a little carbonate of lime, united with a considerable proportion of animal matter, partly of an oily nature."

I fear the only point we can propose to investigate in this disease, is its diagnosis, and the consequent prognosis; with the additional advantage of being preserved from the employment of useless and improper remedies. These, however, are points of no mean consideration in the practice of physic.

II. The second case of disease which I proceed to bring before your readers, is one of a very different character, inasmuch as its early detection leads to an efficacious mode of cure.

Some time ago I was consulted in the case of a young married lady, at Pentonville. She had long complained of pain situated over the region of the sigmoid flexure of the colon, increased on pressure, and on taking purgative medicine, with great difficulty in moving the bowels; in short, of all the symptoms of partial stricture.

I prescribed the unguentum hydrargyri, so as to affect the mouth. The symptoms slowly, and eventually, and entirely disappeared.

Shortly after this period, I attended a servant maid, residing at Paddington, affected by similar symptoms, of considerable duration. There was great tenderness under pressure; the action of all aperient medicine was painful and difficult. The symptoms were longer in yielding; the mouth became very sore; but the symptoms did yield, and the patient, after having been for a time in the country, is once more in good health, and occupying her former situation.

I have considered these cases as instances of partial peritonitis; and for the use of the mercury as a cure for this disease, I believe we are indebted to Dr. Farre, to whose useful labours in our profession it gives me great

pleasure thus to add my feeble but sincere tribute of praise. To this gentleman's useful discovery, a poor woman, affected with tumor from partial peritonitis, occurring after delivery, owes her recent restoration to her family: but it would be foreign to the objects of this paper to detail a case, however interesting, here.

III. I now proceed to the third subject of this essay. It occasionally happens that symptoms resembling those of stricture of the rectum occur independently of that formidable disease. Such a case fell under my notice some years ago. It may offer a useful warning to the young, and to those whose minds may be biassed (and whose is not?), to detail it here.

The patient was a medical practitioner. Naturally, or at least during a long time, pale, he became paler, thin, and weak, and was obliged to relinquish the toils of a country practice. After a time he went to Bath, unimproved in health. He there met with a gentleman, who took up the idea that the case was stricture of the rectum. (I believe such phantoms have much haunted that region of late!) It was but one step farther to the use of the bougie. This remedy was therefore employed daily, during the remaining part of this patient's residence at Bath.

On quitting Bath, I met my friend in London. We consulted Dr. Mansfield Clark. He concurred with me, that there was no stricture. The bougie was relinquished, and the patient recovered forthwith!

It may be said that, in spite of what has been narrated, there still was stricture. To this allegation it may be replied, first, that during nine weeks' daily attendance *before* the visit to Bath, I could detect none; secondly, that immediately afterwards, Dr. Clark declared that there was no disease—an opinion, the truth of which the event has proved; thirdly, it must at least be admitted, that were the bougie *ever* required, it was at least continued too long; and fourthly and lastly, that the stricture, if it did exist, was not schirrous.

I leave these facts and remarks with your readers. I warn them to beware of a bias so apt to creep into the minds of medical men, leading them to conclude too soon that the case is so and so. Let us listen more to our patients,

and reconsider their cases; and we shall become better, because, in the best sense of the words, more cautious, practitioners. Another case precisely similar occurred to me in the person of a lady of Lincolnshire a short time ago. The bowels could not be moved; the case was judged to be stricture; the bougie was employed! yet there was no stricture!

IV. A short time ago I received from a lady, residing at Bayswater, a vial containing much stringy, fibrous matter. It had been passed by her little boy, about seven years old; without, however, having induced any symptoms.

I examined this substance carefully, but could not discover what it was. I sent it to a well-known chemist, who gave it as his opinion that it was of vegetable origin, and suggested that it might be the fibrous part of rhubarb, or of French beans; and stated that he had known distressing symptoms to arise in the case of a woman who was in the habit, in sewing, of swallowing ends of threads;—these had formed into balls, had induced inconvenience in their transit through the alimentary canal, had been passed, and had been afterwards unravelled.

The case of my little patient occurred, however, in the month of September, and the mother of the little boy could offer no conjecture as to the source of this fibrous substance, even after its supposed origin had been suggested to her. Might it be the fibres of liquorice-root? It was afterwards conjectured that it was the fibrous part of radishes taken up at this untimely season of the year.

Nothing would be more useful, in medical literature, than *complete tables* of all such morbid affections as have been *known* to exist. So many are overlooked, merely because we are not aware of their occurrence in practice, if this happen to be rather rare, that such tables would form an important clinical companion. But more of this hereafter.

I remain, sir,  
Very sincerely yours,  
PHILAETHES.

## OBSERVATIONS

ON

MR. BARTON'S MODE OF TREATING  
CERTAIN INJURIES OF THE EYE,

By R. MIDDLEMORE, Esq.

Assistant-Surgeon to the Birmingham Eye  
Infirmary.

— —

BEING connected with a large institution for the reception of patients affected with "diseases of the eye," situated in the midst of a manufacturing and mining district, it may fairly be presumed that an immense number of accidents similar to those mentioned by your correspondent at Manchester present themselves to my notice.

When a patient has received a punctured wound of the cornea and capsule of the lens, I should not content myself with "promoting or subduing inflammation by venesection, leeching," &c.; but after having prevented, as far as possible, the occurrence of severe inflammation, by bleeding, counter-irritation, and cooling lotions, endeavour to promote the speedy absorption of the lens, and prevent the contraction of the pupil, by calomel and opium, and the local application of belladonna cerate. Should this accident occur in a young person (the iris not being wounded, and the section of the cornea being small), I should expect to accomplish these objects with tolerable certainty, without having to encounter any such symptoms as continued pain and disorganizing inflammation of the iris, from the pressure of a soft and broken lens; or meeting with, "in the majority of cases," the catalogue of evils enumerated by Mr. Barton. In a patient more advanced in life, with a hard and large lens, fixed in a situation intermediate between the anterior and posterior chambers, its sharp edges resting against the pupillary margin of the iris (a singularly rare phenomenon), symptoms of a severe character, justifying the immediate removal of the lens, may arise; consisting chiefly of intense pain, commencing change of structure, and irritation of the opposite organ. I however repeat, that it is not customary for a lens, not altered by any morbid action, to produce any very severe and uncontrollable symptoms, when situated in the anterior chamber—the iris,

in such case, not being pressed against a hard and unyielding substance, but floating, though not so freely as usual, in the natural secretions of the part. In proof of this opinion, I would refer to the case of spontaneous dislocation of the lens, shewn to me by Mr. Smith, to which I have alluded in my report to the Midland Medical and Surgical Reporter.

During the last year I have removed from one patient a long lens; from another a morbidly enlarged and dense lens; from a third a large mass of thick lymph; which in each case, by its pressure upon the iris, produced symptoms of a most tormenting and unmanageable character; but in no case has it been found necessary to remove a natural lens when displaced either by wound of its capsule, or from concussion. A blow upon the eye, or severe concussion of the body, more particularly a fall upon the head, is sometimes succeeded by displacement of the lens. Inflammation, in its severest form, arises as a consequence of so great an injury: to attempt to subdue inflammation so excited by the infliction of additional injury, would, in my humble opinion, be a measure opposed to all sound and judicious practice. Did the inflammation arise from the pressure, and not from the concussion or the blow, the extraction knife, it is admitted, would be the best remedy for its cure.

I believe, sir, that in most instances where it becomes necessary to remove the crystalline lens, in consequence of its injurious pressure upon the iris, the dislocation has been occasioned by disease—the lens being, for the most part, changed in figure, structure, or consistence; the various textures of the eye being irritable and morbidly sensitive, and the absorbing surface of the chambers being, by some process or other, destroyed, or prevented from acting in a sufficiently energetic manner to remove the irritating substance. There can be, therefore, no prospect of its absorption; and its removal can only be accomplished by an operation.

In conclusion I would observe, that whenever a lens has become dislocated by accident, and does not appear to be acted upon by the absorbents, after a proper plan for the removal of inflammation and the promotion of absorption has been adopted—if the pain and inflammation continue—if change of struc-



ture commence, and the opposite organ become irritable and painful, it ought to be removed, and extraction is, of course, the proper operation for that purpose; but to remove it by an operation capable of inflicting much injury, and producing great inflammation, before these measures have been employed, would, in my opinion, be a needlessly precipitate and injurious measure.

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## MEDICAL GAZETTE.

*Saturday, April 3, 1830.*

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"Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."—CICERO.

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### UNIVERSITY OF DUBLIN.

WE have recently perused, in the pages of our weekly cotemporary, a leading article under the very attractive title of the "Dublin Mother and her Babes;" consisting of an imaginative essay on the ordinances of the Irish University. We read the article with due attention, and will take leave to offer a few remarks on its merits. But first we must confess, that though in some measure prepared for the perusal of this rare diatribe against the medical school of Dublin, by the preliminary flourishing of the writer in some two or three preceding numbers; yet, from the spiritless, soporific quality of these, we thought it more than probable that the gentleman would, in the end, lull himself and his readers into a perfect sleep: he has, however, at length roused himself up, though the illusive character of his sleeping thoughts is still evidently impressed upon his waking deliberations; the phantoms of the ivory gate are still pursuing him; and the consequence is, his present lucubration has all the extravagancy of a waking dream. It is, in truth, a most rare composition. An eminent authority has told us, that there has never yet

been a tissue of falsehood so complete and perfect, as not to contain at least some truth in it. We are tempted to pronounce the article on the University of Dublin an exception; for, from beginning to end, we cannot find a single statement that is not utterly untrue. If the writer was really broad awake when he penned the precious document, we cannot help wondering where he thought the intellects and the judgment of his readers, however humble, were fled, when he ventured to dose them with such assertions. The credit he gives them for gullibility is surely unlimited; as for common decency, it is a thing of no account—a superfluity not regarded by the writers, and therefore apparently not much prized by the readers of the *Lancet*. We will therefore pass over, as matter of course, the vulgar strain of indecent imagery in which the article in question is couched, and proceed at once to notice some of its most material falsehoods; premising that Ireland is not quite at the Antipodes, that the truth should be ascertained with difficulty. *Sus minervam* is an adage in point, and sufficiently descriptive of the rank and consequence of this literary reformer; but lest there should be any weak enough to credit his statements, or to countenance his pretensions, we shall exhibit a sample of his quality, and shame him by a simple test—if he be not indeed proof against that charm which could shame the only one we ever heard of who was a greater falsifier than him.

It would be ridiculous to enter upon a defence of the medical arrangements of the University of Dublin, by way of answer to any remarks coming from such a quarter; much more to complain of the abuse which the writer endeavours to heap on the discipline in arts afforded by that seat of learning. His flippant mis-statements (too gentle a name to give them) abundantly shew

the extent of his acquaintance with either the one subject or the other. When we find him talking of "putting in our terms," in a university where *no degree* is obtained by keeping terms; of the "absurdity of a four years' classical noviciate," as descriptive of the undergraduate course in a university which emulates the discipline and attainments of her learned sister of Cambridge; of certain regulations of costume, which could only attract the notice of little minds, as "ordinances" of the Irish University; we have some clue to what *he* knows about taking a degree there or any where else. When we have Sir Oracle delivering himself on the reading and study suited to an accomplished physician, and declaring, *totidem verbis*, that "the classical part of the matter might be entirely dispensed with," we may safely allow him to proceed in this matter as he has begun—with his harmless and puerile absurdities.

But if from these we turn to his medical strictures, we shall scarcely find that he is one whit more wise or better informed. On the arrangements of the University of Dublin with respect to graduation, he had probably been told by some one that there were two kinds of medical degrees obtainable there—one in three years after the preparatory and indispensable degree in arts, the other in five years after the first medical degree. The same arrangement prevails in the other faculties of common law and divinity; the first degree being *ad respondendum questioni*—the second, and final one, *ad incipiendum*. Every university man must be familiar with this. Yet the detail, it seems, was too complicated and puzzling for the editorial scribe of the *Lancet*. The University of Dublin, he immediately informs his readers, turns out two sorts of practitioners, each with a license to practise; which, he humbly conceives, is both inconsistent and cri-

minial. Here there happens to be only a double blunder; for the University not only gives no license to practise, but never once recognizes her graduates as practitioners. The same ordinance prevails at Oxford and Cambridge, and forms a striking contrast with the manner of proceeding in the universities of Scotland.

That the gentleman is so well satisfied with the doctors graduate, must be a pleasing reflection to them: he complains, indeed, that they are twelve year men (though, with a curious confusion of ideas, he describes them as old practitioners at the end of this period), but, on the whole, he is evidently very well content with them. The doctor graduate is quite "a master-piece," in his opinion; the only "genuine" doctor—a scholar and a man of experience—and every way a very "superior" personage; one on whom "the old lady" has expended all her care, and in whose nourishment she has taken especial pains. Now what are the facts? This "variety" receives *no education* from "the old lady," beyond what he obtains as a bachelor of medicine; he is simply a bachelor of at least five years' standing, and undergoes, in general, *no examination* for his degree—or if he do, merely a formal one; more especially if he have been previously examined by the same professors for his bachelorship. So that all the statement about "her reserving all her amiable severity for her final scrutiny into his deserts, when conferring on him her last rewards," is perfectly gratuitous and false.

But if the gentleman be so well satisfied with the education of the "genuine" doctor—who, by the by, is truly a *rara avis*, there-being perhaps not five of that class in all Ireland (nay, perhaps not half a dozen have commenced there as full doctors of medicine these twenty years,—he must be also satis-

fied—though he will not confess it—with the education of the bachelor; for his *alma mater* takes, as we have already intimated, no cognizance of him after his first medical degree—knows not, in fact, that there is such a person alive, until he comes to look for his last honours; she then ascertains that he has duly obtained his bachelorship, and that the proper interval has meantime elapsed. Thus the bachelor of physic is ultimately dubbed a “genuine” doctor. We will now go farther, and shew, that though there is no such thing as an eight years medical education in the University of Dublin, the three years noviciate is of such a nature as to enable the Dublin bachelor of physic to take his stand with any graduate doctors of his own or any other university in the united kingdom.

To obtain the bachelorship of medicine in Dublin, the admirable course laid down for all students in arts in that University must be previously gone through; and the first degree in arts cannot be obtained in less than four years and a half. With this preparation, the student is supposed to enter upon his medical career with peculiar advantages; and so he does. It should not be omitted that this preparatory course, in addition to an ample and wide range of classical literature, embraces also an extensive field of pure and mixed mathematics—the latter fully illustrated by the sciences of astronomy, mechanics, hydrostatics, and optics; the other parts of the course take in metaphysical and moral science. We take for granted, that it is not necessary to prove by example how well calculated this course is to form the habits of the student, and to enable him to adorn his profession and walk in life, whatever they may be. Eminent individuals, educated in the Irish University, will readily occur to the memory of every reader. They have lived many of

them, to shed a lustre on the historical records of their country; they shine, and have shone in the senate; and they constitute a great body of the most popular writers for the British press. So much for the senseless sneers of the writer in question, who is incapable of appreciating what he has never enjoyed, and cannot understand. But to return to the medical arrangements. After graduating in arts, the student enters upon a three years’ course of medical study; he may, indeed, have attended some of the medical classes simultaneously with his studies in the arts; and frequently this is the case, though it does not reckon in procuring him the bachelorship the sooner. The course of medical study is precisely similar to that prescribed in Edinburgh; the requisite attendances on professors are the same for the Dublin bachelor and the Edinburgh doctor; while the former has this peculiar advantage superadded—that he has been previously initiated in the arts; and it is scarcely necessary to allude to his superior opportunities in pursuing his anatomical studies in the sister kingdom. No doubt there may have been many who have squandered away their opportunities and advantages—who have contrived to cheat their *alma mater*, and have procured admission to a rank and station of which they are unworthy. These are evidently “the stuff” with which the writer in question boasts an intimate acquaintance.

We shall now briefly shew cause why the bachelor of physic in the Dublin University may justly consider his *academic* education as complete; and why he may very properly (notwithstanding the negative of his learned adversary) “arrogate the titles and habits of the genuine doctor.” He has good and potent reasons for so doing. In the first place, his expenses of time and money, in attaining the bachelor-

ship, have been so considerable, that prudence naturally suggests to him the propriety of thinking twice before he expend another heavy fee, and wait five more years for the *summi honores*—a mere title, as I have already explained. Again: the education he has been already provided with, is as good as he could have procured in any school in the British empire. And, lastly, the education of the bachelor of medicine is the entire of the medical education which the University affords; no solid or essential benefit is derived from his longer residence. The Dublin bachelor, therefore (unless he have some very unusual motive to influence him), feels himself competent to enter upon his professional career without further delay; and if the courtesy of the age style him “doctor,” as it does the bachelors of Oxford and Cambridge, he would be a fool to reject the denomination, while he is sensible that he has so good a right to the distinction.

Enough has been said, we should think, to expose the unfounded and presumptuous assertions of this writer; though we have touched on a few only of his manifold misrepresentations—to discuss them all would require the space of a whole Gazette at least. The gross and clumsy fiction of a “twelve-year variety,”—the “genuine” doctor, who receives eight years’ medical education, of a peculiar and recondite character—is entirely the offspring of the writer’s brain—a man of straw, whom he erects into a goodly and respectable shape, for the mere purpose of making an exhibition of him. His account of the bachelor’s noviciate, as of inferior description, or defective, is not supported by the shadow of a proof, and displays an utter ignorance of the Dublin University as a school of literature and science. Why should we, then, be surprised at such egregious nonsense as the following, by way of upshot to his re-

veries? “We conceive,” says the editorial functionary, “that eight years are too much, and that three years are too little, for acquiring a competent knowledge of the medical sciences, and that the classical part of the matter might be entirely dispensed with.” Eight years too much to spend in acquiring a competent knowledge of medicine! Shades of Sydenham, Mead, William Hunter, and Baillie, hear it not! though the novelty of such a dictum, did it proceed from a quarter more respectable, were enough to startle you from your meditations in Elysium. So, it seems, whenever eight years are devoted to the study of medicine, there is a certain loss of time; a competent knowledge (competent for what?) is better had in four or five. The prevailing opinion among those who might be expected to know better, is, that the labour of a man’s life, and of a long life too, is inconsiderable in respect to the boundless extent of medical science. Our reformer, however, is quite of another mind; though, according to him, we may have a “genuine” doctor—“a master-piece”—quite a “superior” personage, after an eight years’ education; yet, forsooth, again eight years are “too much.” But enough; we treat the silly trash too respectfully in bestowing so much notice upon it.

To conclude: whilst we would vindicate the system of medical education in Dublin from the slanderous aspersions of the *Lancet*, we are far from holding it up as a model of perfection. Much, no doubt, might be pointed out in it susceptible of improvement. Neither should we hesitate to pronounce that improvement will in due time be adopted; but, of course, with a prudent circumspection, as it should always be in a matter of so much importance, and of such difficult discernment. But whenever any change may occur, the sophism of *propter* for *post* will im-



mediately come into play; it will be entirely owing to the ordinances of the *Lancet*. It is quite ludicrous to observe the pretensions of the "invaluable" editor in this way. He predicts with all the talent of another Partridge. Wait till "the ensuing autumn," has been repeated till the phrase was in men's mouths as a jest; an eclipse of the moon is to occur on a certain day, or a certain great event will take place in a certain great and learned body within the year: the matter may occur in the ordinary course of things, and it is pointed out vauntingly by our learned friend;—that was *my* thunder, he says, like poor philosopher Dennis. In this way he lately boasted of certain regulations in the new charter of the College of Surgeons in Ireland; and now he predicts a reform which is "to take place at some future day," in the University of Dublin. Well may he exclaim, "O bone, quicquid dicam aut erit aut non."

#### LIBRARIAN TO THE KING.

THE late Dr. Gooch was the first member of our profession who held the office of Librarian to the King. The vacancy occasioned by his death has just been filled up by the appointment of Dr. Macmichael; and we have pleasure in mentioning the nomination of that gentleman, both because an honourable mark of distinction is thus retained in the profession, and because it is bestowed on one whose accomplishments and character entitle him to the respect and esteem of his brethren.

#### SLANDEROUS ATTACK ON MR. BENNETT.

AN *anonymous* attack on Mr. Bennett, charging him with dereliction of his duty as a teacher in the London University, appeared in the *Magazine of Slander* the week before last. A meeting was immediately held by his pupils, and certain resolutions of rather a pithy

nature passed; in which these gentlemen state, that they "view with *disgust and indignation* the unfeeling and ungenerous allusion made by the writer to Mr. Bennett's late severe indisposition," and that they "feel an *unlimited contempt for the dastardly manner in which this attack has been made*;" that they "feel perfectly satisfied with the arrangements which Mr. Bennett has made," and "consider the charge of neglect against Mr. Phillip *a gross falsehood*." This document, signed by 110 pupils, was transmitted to the Editor of the *Lancet*, who was thus compelled to record the malignity and falsehood of the charges which had appeared in his previous number.

#### VACCINATION.

*Copy of the Report from the National Vaccine Establishment to the Secretary of State for the Home Department. Ordered to be printed March 11th, 1830.*

TO THE RIGHT HON. ROBERT PEEL,  
Secretary of State, &c. &c. &c.

SIR,

WE have the honour to inform you, that the small-pox has prevailed epidemically in several parts of the country, with great severity, in the course of the last twelve months, and that not less than twenty-eight well authenticated instances have been reported to us, from different parts of the kingdom, of the disease having recurred to people who had had it before, either naturally or by inoculation.

We cannot be surprised, therefore, if it shall have been found that many who have been vaccinated, have also contracted the small-pox after it.

We have the satisfaction, however, of being assured, on the most unquestionable authority, that vaccination has protected some individuals under the most dangerous exposure to contagion, and that those who have been so unfortunate as to take the small-pox after it, have very generally passed through a mild and safe disease.

We are not disposed to over-rate the value of the resource, the administration of which you confide to our super-



intendence, by considering it as affording a certain security against small-pox in all cases ; but every year places its comparative merit in a more striking point of view ; and we persevere in declaring, that we believe it to be as much more prudent to vaccinate than to inoculate, as it was better to inoculate than to allow the small-pox to take its course without control.

Signed by the usual Officers.

## COLLEGE OF PHYSICIANS,

Monday, March 22.

SIR H. HALFORD, PRESIDENT, IN THE CHAIR.

THE meeting this evening was perhaps the most crowded of the season, and we observed in the room many unprofessional persons of rank and literary distinction. Dr. Hawkins proceeded to read a paper, by Dr. James Wilson, on

### *Apoplexy of the Lungs, with thickened Mitral Valves.*

The author began by stating that there exist relations between the heart and lungs, both as to structure and function, which are too little observed. The action of the heart, he remarked, is considered too simply ;—the single fact of the circulation, deserving as it is of admiration, becomes still more so when contemplated in its details and various contingencies. To some of these, as connected with certain changes of structure in that organ, it was the author's wish to direct the attention of his hearers.

These diseases have of late been so much investigated, and have been so much in fashion, that it has been supposed by some that structural derangements of the heart are actually more common than formerly—a circumstance attempted to be accounted for by the increase of moral and physical causes in this sensitive age acting sympathetically upon the heart, and thus leading to changes in its structure. In accordance with this idea, Dr. Wilson hinted at the effects of suppressed emotion—the result of the fastidiousness of manner in the present state of society giving rise to the concealment of passion, and quoted the apt expression—"the grief that does not speak whispers the o'er-fraught heart, and bids it break."

While the member of modern society smothers his feelings, and thus "dilates his heart or cracks his arteries," the child or savage gives vent to his passion in violent gestures, stamping, tossing his arms, and so forth ; by which the blood is impelled to the extremities, and the large vessels are relieved. Increased anxiety is the natural result of the more numerous wants and excited feelings of highly-cultivated life ; and anxiety exerts its peculiar influence on the heart. This influence Dr. Wilson regards as operating in the production of a peculiar state of its fibres ; perhaps resembling that of other muscles liable to be called into sudden action, followed by fatigue. The expressions, "heart-ache," and "serrement de cœur," were adduced as true to nature, and illustrating the reality of this sensation.

After these preliminary remarks, the author proceeded to discuss more particularly certain cases in which inordinate thickening of the mitral valves was coincident with a remarkable coagulation of the blood in the left auricle and in the lungs. The auriculo-ventricular opening being narrowed by perverted growth, the blood of course was interrupted in its passage towards the ventricle, and thus coagulated behind the obstruction—that is, in the auricle and in the lungs. In two of the cases adduced, the thickening of the mitral valves was inferred before the heart was opened from the black masses of coagulum in the lungs, a similar coincidence having been previously noticed in another case. The preparation of the parts, taken from the subject of the first case, was laid on the table : it exhibited a great and almost complete obstruction to the passage of blood from the left ventricle to the aorta. The auricle had no appearance of cavity—being occupied by a solid coagulum of blood. On removing this the mitral valve was found to be universally thickened, of an almost tendinous consistence, leaving only a short narrow chink, which was still farther contracted by deposits of lymph on the the margins of the valve. On filling the auricle with water the following day, and suspending it by its outstretched sides, the fluid passed only *guttatim* into the ventricle. Reasoning upon this fact, the author observed on the strange state of the circulation in this patient ; during which, however, she sat up, conversed rationally, and discharged all the

animal functions, while the blood was supplied to her system, not in a current of the usual volume, but "by drop and by drop." The patient was placed in the situation of a person with a ligature round the left side of the heart, and lived under its increasing pressure; nor was the fatal termination at length induced apparently by any immediate effect on the heart, but by the blocking up of the lungs, and their being thus rendered unfit for the discharge of their functions. Another circumstance worthy of observation in this case was the state of the animal heat. The body had been removed soon after death to the out-house used for post-mortem examinations, and had remained there for some hours, at a low temperature, but continued so warm that the inquiry into the cause of death was postponed. Without attempting to deduce from this fact all the inferences to which it might give rise, the author contented himself with remarking that it was calculated to illustrate the subject of trance—by proving how inconsiderable an action of the heart, and how minute a current of blood is sufficient for the maintenance of life, especially under circumstances where there is little waste or excitement of the system. The author next proceeded to instance the quiescent state of the sleeping infant. "So motionless is its slumber, that in watching it we tremble, and become impatient for some stir or sound that may assure us of its life; yet is the fancy of the little sleeper busy, and every artery, and every pulse of its frame, engaged in the work of growth and secretion, though his breath would not stir the smallest insect that sported on his lip—though his pulse would not lift the flower-leaf of which he dreamed from his bosom." Yet following this emblem of tranquillity into after life, we see him exposed to every climate—contending with every obstacle—agitated by every passion; and under these varying circumstances, how different is the power and degree of the heart's action, which has not only to beat, but "to beat time" through every moment of a long and troubled life. It is from contemplating the subject in this light that the author is induced to assert that we are apt in general to consider the heart too simply, both in physiology and in disease.

After adverting to the structure of the

heart and lungs as mutually adapted to harmonize in the functions of each other, the author proceeded to enlist among his illustrations of the heart's action under the passions, some of the happiest of Shakspeare's expressions—expressions which, above all others, mark him to have been the poet of nature. Thus we have: "Measureless liar, thou hast made my heart too big for what contains it."—"Else why does my seated heart knock at my ribs against the use of nature?"—"My bosom's lord sits lightly on his throne," and many others.

In conclusion, Dr. Wilson strongly insisted on the necessity of the physician studying man, not as a mere machine, but as a creature of mind and soul as well as matter—not as a solitary being, but as one of "boundless relations and immaterial agencies." He alluded to the "grace and talent" with which this principle of examining into disease by opening the pages not only of "physical science, but of lofty thought and tender emotion," had been recently illustrated within these walls. The paper abounded in classical illustration, and was a true echo—to borrow the author's own words—"of the chord first struck by the master-hand of the president."

## ROYAL INSTITUTION,

Friday, March 19,


SIR GIFFIN WILSON, F.R.S. IN THE CHAIR.

### *Mr. Ritchie's New Photometer.*


THE various "Methods proposed for measuring the Intensities of Natural and Artificial Light," were this evening discussed by Mr. Ritchie, and the principles illustrated by numerous experiments.

He commenced by making some observations on the circumstance, that although different kinds and degrees of light, as of the sun, stars, lamps, fires, candles, &c. had been unavoidably noticed for centuries, it is only in comparatively recent times that any attempts have been made to measure with precision their relative intensities. After proving, what every one admits, that Leslie's beautiful instrument is not a

photometer, but rather a photoscope, and shewing that the ordinary plan of estimating the intensities of different lights by the depths of shadow that each will cast, is not so easily judged of by the eye, as contrasting the brightness of continuous illuminated surfaces; he proceeded to exhibit several instruments, both in their original and improved states, which truly deserve their name—*photometers*. The principle on which they are constructed is extremely simple, for they essentially consist only of two discs of white paper, or any other translucent body, or one plane divided into two compartments by an upright of black card, thus, O O, or



, so that the light from two different sources may be allowed to impinge separately on the same or immediately contingent planes: it is astonishing with what accuracy the eye distinguishes any inequality in the degree of illumination, so that even the difficulty which has by other means been so great, of estimating the relative illuminating powers of different *coloured* flames, may be in great measure obviated by having some letters in a clear type printed on the paper shields, and ascertaining the facility with which they can be read by different lights, at different distances.


Various modifications of this instrument have been devised for ascertaining the intensity of light under different circumstances; if to measure that of different points of the heavens, two paper discs, which are fixed to the apertures of two tubes with a moveable joint, thus,

, allowing motion in any angle, and direction to almost any points, however wide apart; and the intensity is measured by adding an extra tube, which will push in or out of either leg to any required length in the brightest, and adjusting the extent until the illumination of the discs at the lower ends next the observer is equal: when the difference in the lengths of the legs will give the difference in the intensity of the light.

The improved photometer recommended by Mr. R. for experimenting on artificial light, consists of the white paper shield divided into its two compartments, as before, by the perpendicular of black card, fitted into a box, with

the ends open, so that the light from the different flames to be examined can fall upon two obliquely fixed mirrors, or inclined planes of paper, and be thence reflected on the paper shield,

thus, ; to the upper part of which may be attached a blackened chamber, thus, , through which,

to observe the shield, this appendage intercepts any extraneous light that would otherwise vitiate the result. To use this instrument, the lights to be examined should be placed in the same line, with the photometer between them, thus, , and if they are

of equal intensities, the distance of each from the instrument will be equal; if they be of unequal intensities, the photometer must be moved more or less towards the weaker light, to render the illumination of the two compartments of the shield equal to each, and then the intensities or different illuminating powers will be expressed by the squares of the respective distances.

This instrument likewise is a very convenient mode of computing the quantity of light intercepted by any transparent substances, by interposing glass, paper, &c. &c. between one of the lights and the photometer, having previously equalized the illumination, and then measuring the distance which the instrument must recede from the one light and approach towards the other, to again equalize the illumination of the two compartments of the shield.

To illustrate the efficacy of the photometer, various experiments were performed with wax candles, argand lamps, oil gas, the combustion of phosphorus in oxygen, and the combustion of lime with jets of oxygen and hydrogen, on the plan proposed by Lieut. Drummond for trigonometrical surveys: the brilliancy and intensity of the latter light is indescribable. Some idea, however, may be formed of it from a circumstance which we observed, although not alluded to by the lecturer, viz. that the oil gas with which the theatre is lighted, notwithstanding it was burning brilliantly, was so completely overpowered that very distinct SHADOWS of the *flames* were cast upon the ceiling; and also from the fact, that it has been seen, as we are informed, at 60 miles



off in a foggy, and at the distance of 100 miles in a clear night.

*Specimens of the Phallus Impudicus, &c.*

In the library were samples, plans, and models, of Mr. Turrel's proposed method of paving streets with stone set on cast-iron arches; Mr. Arnold's self-registering measure for liquids: various specimens of protophytes from Mr. Burnett's collection, and two examples of that most curious and somewhat rare fungus, the *Phallus impudicus*, found by Mr. B. in Kensington Gardens. This extraordinary vegetable is certainly a *lusus naturæ* in the most correct acceptation of the phrase, for it has an extremely close resemblance to the penis, the pileus simulating the glans, the stipes the trunk of the penis, the radical intumescence the scrotum, and to complete the mockery, the stipes is traversed throughout its whole extent by a canal, which might be likened to the urethra.

The subject announced for Friday the 28th is, "the Doctrine of Life Contingencies," to be treated by Mr. Brooke.

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DR. BURROWS'S LETTER TO SIR HENRY HALFORD.

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DR. BURROWS has just addressed a letter to Sir Henry Halford, "touching some points of the evidence and observations of counsel on a commission of lunacy on Mr. Edward Davies." In an article published soon after the commission, we pointed out various particulars in the treatment which Dr. Burrows had experienced, which we thought harsh and unjust. He now speaks for himself, and we think it an act of justice to subjoin some of the more important points; our limits compelling us to restrict ourselves to these. We cannot refrain from directing attention to the curious circumstance mentioned by Dr. Burrows at the conclusion of our extracts.

Having from the first visit taken a very decided view of the nature of Mr. Davies' case, I acted upon it, and gave my testimony in accordance with it. Yet I have been made to feel that integrity of purpose is not proof against malevolence and misrepresentation.

Intending offence to no one, and anxious only to perform my professional duty, it were superfluous to say that I felt surprise at the manifestation of a hostile spirit, which has, from the beginning of this case, never ceased endeavouring to malign me.

The persecution I have endured from this source can only be credited by those who have felt an interest in me, and read the daily papers; or have had an opportunity of seeing the other proofs of it in my hands. During a course of six months, traducement has never ceased. *Ex-parte* police and law reports, false and exaggerated statements, public and anonymous communications, inculcating my motives and conduct, have been circulated through innumerable channels, with a regularity which proves it to be the effect of a system. The object could not be misunderstood; and the nearer the opening of the commission *de lunatico inquirendo* on Mr. Davies, the more frequent and pointed were these attacks. The only cause I can assign for them is, the dread lest my evidence, if unimpeached, should have a preponderating influence on the verdict.

I might have treated this proceeding with contempt, and without apprehension, had I not this proof that it had made an impression I could never have anticipated: about two months after the first newspaper report (August 15th) of Mr. Davies' case, in which although my name was not mentioned, and the falsities it contained were corrected in the same journal on the following day, yet I received a summons to appear before the Metropolitan Commissioners in Lunacy, to answer queries, as it expressed, "with regard to the case of Mr. Davies, noticed in the newspaper." If such were the effect of an *ex-parte* police report on a body composed of gentlemen of rank and education, clothed too with a judicial character, is it to be wondered at if the community were misled and prejudiced?

Indeed, such was the bitterness of the party against me, that during the inquiry I was assailed by numerous anonymous letters, and as soon as the verdict was delivered, my very life was threatened. These did not cease for many weeks afterwards\*.

In this excited state of public opinion the commission opened.

\* \* \* \* \*

I shall separately state the five principal charges which Mr. Brougham made when commenting on my evidence, and offer in refutation such observations as each suggests.

I. That I betrayed more the feeling of a partisan than an impartial witness at-

\* Out of more than forty of these letters I select, as a specimen, the following, sent the day after the verdict:—"Dr. Burrows is cautioned to take care of himself. His consummate villany will be expiated by BLOOD only."—Dated Dec. 26.

tending to give unbiassed evidence; for I was always desiring to go on my own way, without interruption.

*Observations.*—On all commissions which I have ever attended, the commissioners have rather encouraged the medical witness to narrate his observations on the alleged lunatic, as being the best and shortest way of obtaining his evidence; and afterwards the court and counsel have examined and cross-examined him. I wished to pursue this course; but Sir Charles Wetherell, perhaps from an imperfect knowledge of the order of the facts I had to state, was, by putting questions relating to those subsequent, interrupting me, to the omission of important intervening facts. I therefore begged permission to proceed in my own course; and in so doing, I merely followed that adopted by all the other medical witnesses.

II. That I was mainly instrumental in sending Mr. Davies to my house at Clapham.

Extract from the Minutes of Evidence :—

Dr. BURROWS examined by Sir CHARLES WETHERELL.

Q. On the 19th of August Mr. Davies was removed to Clapham Retreat?—A. Yes.

Q. Under the certificate of Mr. Lawrence and Dr. Blundell?—A. Yes.

Q. Did you recommend his removal yourself from the lodgings (in Portland Terrace)?—A. I beg it to be distinctly understood that I did not; nor did I interpose in it in any way. I knew he was going there, (Clapham Retreat), but did not recommend it: it is quite contrary to my practice so to do.

Q. You did not recommend his removal to the Retreat?—A. No; I did not, most distinctly.

Cross-examined by Mr. BROUGHAM.

Q. He (Mr. D.) went there (to his house at Crouch Hill) under the care of two of your men?—A. Yes, he did.

Q. And he afterwards went to Portland Terrace without your having any thing to do with his removal?—A. Yes.

Q. And he came to your house at Clapham without your giving directions for that purpose?—A. Yes.

Q. You were aware he was to come?—A. Yes; I was aware on the preceding even-

ing that he was to be there the following day.

\* \* \* \* \*

A communication from Mrs. Bywater was made to me the evening of the 18th, that Mr. Lawrence had recommended, and induced her consent to Mr. Davies' going to my asylum, as the best and securest place he could be placed in.

I freely acknowledge that I concurred in Mr. Lawrence's opinion, that, under the peculiar circumstance of a threatened forced removal of our patient, an asylum was the safest place for him. But as Mr. Lawrence had never hinted such a proceeding to me, I went the following morning, the 19th, at half-past eight, to meet him at Mr. D.'s lodgings. I there ascertained that this was his actual advice. The certificate of insanity being legally signed by the two above-named medical gentlemen, and the order by Mrs. Bywater, I gave it to the keeper, and immediately quitted the house, leaving the hackney-chariot in which I came there to convey Mr. Davies to Clapham.

\* \* \* \* \*

III. That I acknowledged I knew, a day or two before the 19th, that Mr. Davies was going to Clapham Retreat.

*Observations.*—So far from acknowledging that I knew of Mr. Davies' removal to Clapham *a day or two before*, I have sworn, as already shewn, that I did not know of it till the preceding evening. As a proprietor of the asylum, it was of course requisite to mention such intention to me, and have my permission, before he was carried there.

This allegation requires, therefore, no other notice.

IV. That I put my name to a certificate which was to consign a fellow-citizen to a mad-house, under the restraint of keepers, though for ten days before I had had no opportunity of knowing whether he was sane or unsound.

Dr. BURROWS cross-examined by Mr. BROUGHAM.

Q. Did you not give a written order to two of your men to authorise their taking him (Mr. Davies) on the 4th of August?—A. I sent a note with my men on the morning of the 4th of August, to shew to the master of the Furnival's Inn Coffee House, that they were the persons authorised by me and his family to take him to his own house at Hornsey.

Q. Stating that he was insane?—A. The motive you must assign, of course.

Q. Had you seen him for ten days before?—A. I have just sworn that I saw him on the 31st of July.

\* All the extracts from my evidence, or from Mr. Brougham's speech, are taken from the shorthand writer's notes (Mr. Gurney's).

† I affirm, that in no case did I ever recommend a patient to my own asylum in preference to another. Nay, in the last seven years only eight have been sent there upon whom I had been previously attending.—G. M. B.



Q. Not that you saw him?—A. Yes, I have sworn it.

Q. In Philpot Lane?—A. Yes.

\* \* \* \*

Mr. Brougham, commenting further on my evidence, asked—"Will Dr. Burrows, or any man living, take upon himself to tell me, that in ten days a man may not be cured?—that in ten days a man may not become as sound as ever man was?"

These questions, doubtless, as they were intended, made a considerable impression on the court. Had it been admissible, however, I would promptly and confidently have replied, that, agreeably to my general experience, and with the knowledge I possessed of the nature of Mr. Davies' case, and the state of mind I found him in on the 25th of July, when I passed more than an hour with him, it was quite impossible, without a miracle, that he could have been cured and sane on the 4th of August.

There was indisputable evidence that his mind had been disturbed for months, and of a gradual and visible change in his ideas, manners, and habits. His malady appeared to be progressive to the time I first saw him, the 7th of July; and as he had never, even after he consulted me, submitted to regular medical treatment, and continued exposed to the full influence of all the exciting causes of his disorder, so rapid a recovery could not occur. In sudden paroxysms of mania, recovery is possible, though not common, in so short a period as ten days; but in Mr. Davies' case I affirm that such a result was impossible.

V. That my evidence was given under the direct bias of interest; for if Mr. Davies was found of sound mind, I should lose all the profits from retaining him in my asylum.

*Observations.*—I confess I was more surprised at this charge than any other; because Mr. Davies' solicitor, Mr. Hobler, was well acquainted with the repeated efforts I had made, long before the commission issued, to have his client removed from Clapham Retreat; and therefore I conceived that his counsel were equally apprised of that fact; and, being so, that they could never institute a charge against me so easily to be refuted. Nevertheless, the charge was made by Mr. Brougham with all his accustomed impressiveness; and, unfortunately for me, the counsel for the commission found no opportunity of repelling it.

\* \* \* \*

Again and again I begged that Mr. Davies should quit my house; and upon these applications much discussion took place between his family and Mr. Jones, the solicitor for, and Mr. Hobler, the solicitor against, the commission. But they could not agree in what other way Mr. Davies should be dis-

posed of. At length, when the day for commencing the inquiry was fixed, Mr. Davies himself declared he would not remove from Clapham Retreat, except force were used, unless he might be permitted to go, free from all control, to his house at Crouch Hill. His determination was approved by Mr. Hobler, and a strong appeal was made to me by both parties to suffer Mr. Davies to remain; and at length I gave a reluctant permission to his staying there till the inquiry was finished \*.

\* \* \* \*

Viewing, retrospectively, the case of Mr. Davies, and my whole conduct in regard to it, I see no self-accusing act. On the contrary, I maintain that I have not, in any instance, departed from the line which the strictest principles justify.

No blame can attach respecting the medical treatment of him; for, in truth, there was no opportunity of exercising any. During the month which Mr. Lawrence and I attended him, previous to the 4th of August, when he was taken to Crouch Hill, he was never under the least control. His mother would not permit it. Consequently, he adopted or rejected our prescriptions as he pleased. Between the 4th of August and the 26th of December, when the jury pronounced him of sound mind, no prudent physician, under such conflicting circumstances, would have ventured to be responsible for the medical charge of him.

Whether I was right or wrong in my judgment of Mr. Davies' state of mind, is not here the question. Those most competent to judge coincided with me. None, however, who supported the same opinion, need vindication. The event has fully falsified the verdict. It appears that Mr. Davies has never since that verdict was pronounced evinced "a sound mind," nor been "capable of managing himself and his affairs." And, as the climax of this extraordinary case, he now acknowledges that he was, and still is, insane, and justifies those who have affirmed it; and has voluntarily placed himself under the care of two of the physicians who, on the inquiry, gave the strongest testimony of his existing insanity!

May this result teach those inexperienced in the subtleties of intellectual disorders to be less confident in their judgment! May it prove both an example and a warning to future juries on commissions of lunacy! Finally, may it originate some measure to protect British jurisprudence from a similar reproach!

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\* These statements are confirmed by various documents.—E. G.

## HOSPITAL REPORTS.

## GUY'S HOSPITAL.

*Extensive Laceration of the Scalp, with slight Concussion of the Brain.*

CHARLES SMITH, æt. 29, driver of one of the Gravesend fish vans, was admitted under Mr. Morgan on the morning of the 18th of February, having received a severe laceration of the integuments covering the back part of the head.

The patient, at the time of his admission, was in a state of stupefaction, but towards the evening he gradually recovered from that condition. When we visited him, which was not until some hours after he was brought to the hospital, he was in a great measure restored from the drowsy state he had been in when admitted, and could answer questions consistently, but as if his attention was occupied by something else, and he remained with the eyelids closed. The right ear was also (independent of the other wounds) torn from the head, with the exception of a very small portion of the upper part; his pulse was 82, small and regular; pupils of their natural size, but fixed; breathing regular, but somewhat quick. During the day he took 15 grains of colocynth, with calomel; and was ordered to be bled to 12 ounces, and cupped on the nape of the neck.

On the following day he complained of a slight pain in the head; pupils somewhat obedient to light and darkness; pulse nearly as yesterday; bowels open. He says he has no knowledge as to how the accident happened; but being subject to fits, supposes he must have been taken in a paroxysm, and falling among the horses, received a kick from one of them; and the nature of the wounds would seem to corroborate his opinion.

20th.—Still complains of pain across the forehead; pulse 76; bowels open from house medicine\*; tongue clean; says he has had a tolerable night; pupils more susceptible of the stimulus of light.

22d.—Pain in the forehead continues, and he complains of a pain in the bowels, but has no tenderness on pressure; tongue clean; pulse 74, and regular. As the bowels have not been evacuated since the last dose of physic was administered, the pain which he says he experiences is most probably referable to the medicine.

24th.—He is now up, walking about the ward, and says he has no particular symp-

oms to complain of. The pain in the head has entirely left him; the bowels are kept open with house physic.

March 1.—The patient still continues to do well; the wounds in the scalp, which have been dressed twice since his admission, are nearly healed, and he will very soon be dismissed from the hospital.

*Carcinoma of the Penis.*

Robert Colebrook, æt. 43, admitted under Mr. Key on the 12th of February, with the above complaint. The patient says it first made its appearance about two years ago, in the shape of a wart, which was situated (according to his description) on the frænum of the glans penis, and gradually spread until the whole structure was implicated in the disease. This state of the parts was attended at times with shooting pains. He applied to a medical practitioner in the country, who at different times excised the excrescences, but in four-and-twenty hours they were as large as ever; and after having attained to a certain size, would frequently (to use his own expression) "rot off," and discharge a thin matter, and sometimes blood. The disease, at the time of his admission, presented an irregular cauliflower appearance, was of considerable magnitude, and discharging a sanious fetid matter. He states that the prepuce, neither previously to the commencement of the disease, nor at any time, was fixed over the glans, but he was able to draw it forwards or backwards ad libitum; since, however, it has attained to a certain size, the prepuce has been fixed behind the corona.

On the 16th, Mr. Key performed an operation for the removal of the disease. This consisted in first passing a piece of tape around the penis and above the excrescence, with a hole in one end, so as to form a loop to suspend the diseased glans; this was held in the operator's left hand, and the integuments and penis cut through together by one stroke of the knife. The bleeding vessels were afterwards secured, and a pledget of lint placed upon the wound; the latter was again removed towards the evening.

On the 22d, suppuration having taken place, an elastic catheter was introduced into the bladder, and directed to be left there until the sore was healed, to prevent a closure of the orifice of the urethra.

March 5th.—Nothing particular has taken place worthy of remark since last report, with the exception of a slight cold and inflammation of the tonsils, and a difficulty of swallowing; which he soon got better of, from the use of aperient medicines and fumigations of vinegar and water. The glands in the left groin had been somewhat enlarged, but since the operation the swelling has subsided.

On the following day to this report, con-

\* This is composed of salts and senna, not magnesia with sulphate of magnesia, as formerly stated.

sidering himself well, he left the hospital of his own accord.

## ST. THOMAS'S HOSPITAL.

### *Hæmaturia.*

JAMES COUSINS, 25 years of age, by trade a tailor, was admitted into William's ward on the 11th of February, under the care of Dr. Elliotson. He stated at the time of admission that about four weeks ago he was seized with pain and numbness about the region of the umbilicus, which extended down to the pubes, and round to the loins. At this time he passed a considerable quantity of blood with his urine, and continued to do so for about four or five days, when by degrees it became more clear. He now complains of pain and tenderness on pressure over the region of the kidneys, more especially on the right side, which was aggravated at the time he voided blood with his urine. Has pain and tenderness also along the course of the ureters, increased by pressure. There is likewise enlargement of the right testis, which is tender to the touch. He says about thirteen weeks ago he had a severe attack of inflammation of the eyes, and took a large quantity of mercury, when he caught cold, and has not been in a good state of health ever since. The sight of the left organ is diminished, and in a state of incipient amaurosis. Tongue moist, and coated with a yellow fur; sleeps badly; pulse quick. He was ordered to be cupped over the loins to twenty ounces; to take six grains of calomel the following morning, and half an ounce of castor oil at noon, daily.

13th.—Feels considerably relieved by the cupping; bowels freely open; pulse lessened in frequency—is now about 80. Says he was taken last night with vomiting of a greenish bitter matter, whilst in the water-closet; slept more to-night than for the last three weeks; tongue white; not much coated.

15th.—On the 13th, towards the evening, he passed a small quantity of blood with his urine, and a few drops yesterday. Complains of pain in the head, with giddiness and sickness at stomach; tongue clean. There is a slight tenderness over the bladder on pressure, but none along the course of the ureters or over the region of the kidneys; testicle less tender, and decreased in size.

18th.—Mouth sore from the mercury, which he has continued taking every morning since the first dose. Complains of pain in the head, with dimness of sight; bowels open; says he never has the use of them unless after taking the castor oil.

To omit the calomel, and to be cupped on the nape of the neck to twelve ounces.

18th to 24th.—He has a slight pain in the head, but in other respects much improved. On the 20th his urine was high-coloured, depositing a ropy sediment, but we did not perceive any discharge of blood. The dimness of sight at that time had left him, but he still complained of a pain at the back of the head, with heaviness; mouth slightly sore.

29th.—The pain continues in the head, principally referable to the occiput; has passed no blood with his urine; free from pain and tenderness over bladder, kidneys, and ureters; testicle not much affected. Ordered to be cupped over the back of the head to twelve ounces.

March 3d.—The pain at the back of the head much less, but is severe over temples. Ordered to have twenty leeches applied.

5th.—The pain in temples slightly relieved, but his face is much swollen and red, particularly the left side. To have twenty more leeches to the temples. From this time he continued to improve from the pain in his head. His bowels were kept open with castor oil, and on the 9th he was presented cured.

It may be right to observe that he still continued to experience a weight over the head, and had always a dull heavy expression in his eyes. With respect to the symptoms indicating disturbance of the urinary organs, he now made no complaint.

Since this report, the patient has again returned to the hospital, and was admitted into Luke's ward, under the care of Dr. Roots, with a relapse of pain in the loins, from which he has been very considerably relieved by cupping. He now, (March the 27th), complains at times of a violent beating of the heart, on the left side of the chest: nothing indicating morbid structure is heard through stethoscope.

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## BOOKS RECEIVED FOR REVIEW.

A Treatise on Deformities; exhibiting a concise View of the Nature and Treatment of the principal Distortions and Contractions of the Limbs, Joints, and Spine. Illustrated with Engravings. By Lionel J. Beale, Surgeon.

A Practical Essay on the Disease generally known under the denomination of Delirium Tremens; written principally with a view to elucidate its divisions into distinct Stages, and hence to simplify its method of Cure. By Andrew Blake, M.D.

Fourth Report of the Infirmary for the cure of Diseases of the Eye, Cannon-Street, Birmingham.

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W. WILSON, Printer, 57, Skinner-Street, London.



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## LECTURES ON SURGERY,

*Delivered at St. Bartholomew's Hospital,*

BY WILLIAM LAWRENCE, F.R.S.

— from 3

### LECTURE XXX.

*Cancer continued—Treatment—preparations of  
Iron, Arsenic, Opium—question of Opera-  
tion—Fungus Hæmatodes—Melanosis.*

I MENTIONED to you, gentlemen, in my last lecture, that cancer frequently affects the bones, or rather, that it occasionally does so; and I mentioned to you the instance of a patient who died in this hospital in whom a considerable part of the sternum was converted into a mass of cancerous structure. This [presenting a preparation] is part of the sternum of that patient; and you see that instead of being osseous, it is chiefly composed of a dense carcinomatous structure. This is a specimen of cancerous tubercle in the liver of the same individual, constituting a kind of white mass. The whole liver in this patient was beset with tubercles of the same kind, of various sizes, but not equal in firmness to the original disease.

The symptoms which occur in cancerous affections may sometimes be alleviated by treatment upon ordinary principles; that is, when inflammation is present it may be reduced by the application of leeches, and by the application of soft poultices. The disorder of the digestive organs may be corrected by alterative doses of mercury and mild aperients, together with attention to diet; and the severe local pain and great suffering, which are so troublesome in advanced periods of carcinoma, admit of being alleviated by the local and internal use of opium. The watery solution of opium—the liquor opii sedativus of Mr. Battley, or an ointment made by incorporating finely-powdered opium with lard, in the proportion of one drachm

of opium to seven of lard, may be used locally; while you must administer opium internally, in such doses as to control the pain; in fact, in the last stages of the complaint our medical assistance is pretty much reduced to this mode of alleviating the sufferings. The chlorates of soda or lime may be applied, in the form of a lotion, to remove the fetid smell, either immediately to the sore, or by sprinkling it on the linen which the patient employs. The offensive nature of the discharge is extremely disagreeable to the patient herself and to those about her; therefore this is a point that should not be neglected under such circumstances.

During the period of schirrous swelling, local applications seem to be of little avail. I think it will be found generally that the comfort of the patient is best consulted by keeping the part warm. The breast should be kept covered with flannel, or a portion of hare-skin, so as to keep it at a comfortable temperature. The late Mr. Pearson wrote some observations on the subject of cancer. He said that the plan he had found most efficacious in relieving the sufferings which attended this terrible complaint, was to reduce the diet of the patient to the smallest possible amount. We can easily suppose that a stimulating diet—a diet which consists of a great proportion of animal food and fermented liquors, cannot be very advantageous under the circumstances which frequently attend cancerous disease; that is, in a state of considerable inflammation, and of disorder of the digestive functions. It is necessary generally that this should be attended to, and the patient, at all events, have a mild diet. I do not believe, however, in general that a very low diet will materially contribute to the comfort of the patient. Frequently there is a state of depression of the general powers under which some degree of good nourishment is found of advantage. It has been proposed to cure cancer, or at all events to alleviate greatly the sufferings which accompany its progress, by means of vegetable food, by excluding al-



together animal food and fermented liquors from the diet of the patient. Dr. Lamb has written a work on this subject, in which he states with great confidence that a regular perseverance in a diet consisting of vegetable substances, and distilled water, may be capable, not only of relieving the sufferings which attend cancer—of bringing the ulceration into a better condition, but also, in his opinion, of actually curing the complaint. I think it not unlikely that under some circumstances this plan of diet may alleviate the sufferings of the patient; but I have unfortunately had experience, and that of the most convincing kind, that it is not capable of curing cancer; in fact, not capable of preventing the development of cancer even where it has been employed before the disease has made its appearance. I was well acquainted with a lady, a disciple of Dr. Lamb's, and a warm admirer of his, who had lived on distilled water and vegetable diet for not less than six or eight years. She was originally a healthy person when she began this diet; however, at the end of that time, she became the subject of cancer in the tongue, and in fact died of that disease.

We naturally inquire, finding that the ordinary means of treatment are of so little avail in the management of these complaints, whether there are any remedies—whether there is any plan of treatment which can be considered to have the peculiar power—the specific effect of controlling the progress of cancerous disease? Whether, in short, there are any local or general means that can be called *anti-cancerous*? Sometimes certain substances have been supposed to possess this property. Hemlock, or cicuta, has lost the fame it once possessed in this respect. At one time, and that not long ago, it was supposed to possess great power over cancer. With respect to this and other narcotics, we may observe that any influence they have in the treatment of the complaint results from their power of lessening pain; and when we come to the necessity of employing remedies of this class, I believe we shall find there is none that deserves much confidence except opium. Mr. Carmichael has written a work on cancer, the object of which is to recommend very strongly the internal and local employment of various preparations of iron. He has expressly mentioned that he has used the carbonate of iron, the phosphate of iron, and sometimes the arseniate of iron. He has given the carbonate of iron, in the quantity of from half a drachm to a drachm, in the course of a day. Now we may observe that in various other complaints the carbonate of iron has been administered in larger doses—in doses of a drachm or more two or three times in the course of the day. The phosphate of iron has been given by Mr. Carmichael, in doses of a scruple, two or three times a day.

With respect to the local employment of iron, the carbonate, or phosphate, may be applied in the form of powder to the surface of the carcinomatous ulcer; or they may be applied mixed with water, in the consistence of thin paste; or may be mixed with lard, and applied in the form of ointment. The phosphate of iron, which is a more powerful preparation than the carbonate, sometimes acts as a caustic, and destroys the surface of the part to which it is applied; and thus a considerable change in the ulcer may be produced. The arseniate of iron is somewhat more powerful than either of the others, and destroys the vitality of the parts to a considerable depth; and in this way the arseniate of iron, and arsenical preparations themselves, have sometimes been employed in the treatment of cancerous ulcerations; and frequently, after considerable sloughs have been produced by the application of such substances, the surface has taken on the healing process, and given rise to the appearance of a temporary cure.

I have mentioned already that there is occasionally in cancerous ulcers a partial healing—that the destructive nature of cancer is not so inveterate as to admit of no attempt at repair, under any circumstance. Sometimes, however, even when cancerous ulcers are spreading, there are parts that cicatrize in a healthy way; and it is occasionally found that the occurrence of violent inflammation over the general surface of a cancerous sore seems to lead to the death of the part that had undergone the cancerous change; it becomes separated and detached; and thus the ulcer heals. It is not found that such cures are permanent, but they produce a temporary relief; and I mentioned in my last lecture an instance where extensive cancerous ulceration had almost healed under the anti-phlogistic means which the local inflammation of the surrounding parts required. With respect to the power of iron internally or locally in cancer, I believe we may say it has no effect whatever in curing the schirrous tumor or occult cancer. The internal use of iron in the ulcerative stage may be of advantage, by improving the general health. The system becomes affected in the progress of this affection, and the tonic powers of iron may occasionally improve the digestive powers; it may have that kind of influence on the system in the state of cancerous cachexia which it is capable of producing in other analogous cases. Thus the exhibition of carbonate or phosphate of iron internally, may be occasionally beneficial. We can have no doubt that the local application of the powerful preparations that I have mentioned may be capable of producing a change in the condition of the ulceration in the carcinoma. Yet so limited is the power that we can ascribe to iron in the treatment of cancer that we cannot suppose it possesses

essentially anti-cancerous properties; that it is capable of stopping the progress of the disease—of leading to the restorative process, and thus removing the danger to the life of the individual which the disease always appears to carry with it.

The reputation of arsenic in cancer arises entirely from its power over the ulceration, and its influence when applied externally to those ulcers especially that occur about the face; but we know of no power that arsenic possesses over the original schirrous tumor, internally or externally applied.

Since, then, we do not possess any power, by means of treatment conducted on general principles, of essentially controlling the progress of cancer; and since we are not acquainted with any substance or mode of treatment that we can suppose to possess a specific power over this peculiar form of disease, we come to the question, how far it may be advisable to proceed by operation? We certainly have the power of removing the disease with the knife; we can cut away the parts that have undergone cancerous change, and thus completely get rid of the disease. The question is, whether such removal be permanent? Whether the disease will recur? Whether we may expect cancer to shew itself again in its original seat, or whether we may expect some of those secondary affections in the various internal organs which I have mentioned to you to become developed subsequently? These are very important questions.

The consideration of the operation brings us again to the question which I have before mentioned—whether cancer be a local or constitutional disease? If we are satisfied that cancer in an early stage is a local disease, we should be inclined to say that the operation of excision—the extirpation of the diseased parts—would at that time be an effectual mode of curing the patient. I think we may venture to say that excision is a safe and effectual mode of proceeding in the indolent stage of schirrous tumor; that is, when the tumor is loose and moveable, before the skin has become adherent to it, before the tumor becomes fixed to the pectoral muscle, before it has become the seat of any considerable pain, before the vessels have become enlarged, or assumed any thing of a varicose appearance; and particularly before the absorbent glands in the axilla have taken on the disease. At all events, if the operation be not effectual, and cannot be recommended in that condition of the disease, still less can we venture to propose it when the absorbent glands in the axilla have become affected, or the local disease has passed into the ulcerative state.

In operations in the early period that I have mentioned, we have the power of effectually removing the whole of the disease, and taking it away with a considerable por-

tion of the surrounding healthy substance. And in performing the operation for a disease that you have determined to be schirrus, you must not be economical as to what you remove; you must not think of saving the skin and other parts; on the contrary, you should cut round freely, so as to take away not only the whole of the disease, but all those surrounding parts to which any suspicion whatever can attach. It may be well, if the skin is healthy, to divide it simply, to turn it back so as to remove the tumor, and then to bring it together again, if we are quite satisfied that it is healthy; but if we entertain any suspicion that the skin may be involved in the disease, it is much better to remove it. For the same reason, I have invariably followed the practice myself of taking away the whole of the mammary gland, even where there has been only one small scirrhus tumor in the part; and on examining the gland afterwards, on such occasions, I have usually found such appearances in parts more or less remote from the original tumor as led me to be very well satisfied with having taken away the entire substance.

The next questions then are, is the operation to be considered advisable when the lymphatic glands in the axilla have become affected? Is it advisable when the tumor has ulcerated? I can have no hesitation in stating that the general result of experience is, that the disease returns under such circumstances. You may perform the operation, the parts will unite, the wound will heal, and the patient seem to be restored to health. The operation will thus appear to have been successful; but in a longer or shorter time you find, under such circumstances, either that the disease will return in the situation of the part which has been removed, or that some internal organ will become diseased, and the patient perish in consequence. It appears that the opinions of those who have had most experience in the treatment of this complaint, are generally unfavourable to the performing any operation, even in the early stage of the affection. Without quoting Hippocrates and Celsus, both of whom are adverse to the operation, or any active treatment for cancer, I may mention that Baron Boyer, who is now much advanced in years, and who has had the advantage of great experience in cancer, speaks of numerous relapses of the disease that have occurred even when schirrous tumors have been removed under the most favourable circumstances. He adds his opinion afterwards that the disease proceeds more rapidly, and that the patient dies sooner than if no operation had been performed.

I performed the operation for a lady who had a schirrous tumor, about the size of a walnut, seated near the nipple, without any affection of the glands in the axilla. The tumor was quite loose and moveable. I re-

moved the whole of the mamma, and the tumor, when examined, shewed the genuine characters of this disease. I performed the operation in March 1825, and the lady remained perfectly well till the beginning of the present year (1829). In the month of February last she came to consult me, and there was then, at the end of the cicatrix towards the axilla—a part quite removed from the original disease—an ulcerated tumor, and a schirrous gland in the axilla. This lady died in March or April. I only saw her on that occasion, for I considered the case to be totally desperate, and did not propose the operation to her.—I removed the breast of a lady in the month of February 1827. She was a very fine woman—a robust and healthy person. She had discovered the disease about six weeks before I saw her. There was a considerable tumor between the nipple and the axilla, that had been attended with a good deal of pain. The medical gentleman who had seen her in the country had very properly applied leeches, and other means, to remove the local symptoms; but as the affection did not yield to these, the lady came to town, where I saw her. There was then a hard tumor in the situation I have mentioned, with some drawing in, or indentation of the skin: there was no induration of any gland in the axilla. She was about the age of 50, and had ceased menstruating a year or two. She had borne children, and, as I have said, was a very healthy woman. I removed the whole breast, although the tumor occupied but a small part of the gland; and in this instance the characters were those of genuine schirrus. The wound healed extremely well, and she considered herself perfectly cured. Towards the end of the year, however, she began to be ill again—she was indisposed without having any very definite ailment—she got worse and worse. Her medical attendants were at a loss to decide what her complaint might be, but they could not cure her; in fact she died, and no suspicion existed before her death that it was owing to cancer. The cicatrix had remained perfectly sound, and there were no signs of disease in the part originally affected, nor any where else externally. She was examined, and the liver was found an entire mass of schirrus. I did not myself see it, but such was the description given by the gentleman in the country who attended her. Now these are two instances in which the operation was performed under the most favourable circumstances, yet in both these you have seen that the affection was fatal,—in the one the disease returned in the part, and in the other the patient died from similar degeneration internally. Now if this be frequently the case, in instances where the disease is apparently local—that is, confined to the mammary gland—and where

there is no affection of the absorbent glands in the axilla—you may easily suppose that where those glands are affected, there is very little chance of a permanent cure from the operation.

There is another point of view in which the question of operation may be considered, even at a more advanced period than I have mentioned—that is, whether it would be better for a patient to die by the natural progress of cancerous disease—by allowing the part to go to ulceration, with all the sufferings that attend that process; or by removing the disease, to give her an opportunity of dying from the formation of tumors in the viscera, or other internal disorder?

#### *Fungus Hæmatodes.*

*Fungus hæmatodes* is a disease as intractable and as incurable as cancer, if not more so. Generally, as I have mentioned, it has been confounded with cancer; but the very striking difference between the two in consistency cannot fail to attract the notice even of those who call it cancer. Hence it has gone by the name of *soft cancer*. It is the *medullary sarcoma* of Mr. Abernethy—the *fungus medullaris*, as it is called in Latin. By some writers, from the resemblance of the newly-deposited substance to the texture of the brain, it is named *encephaloid*, or brain-like tumor. *Fungus hæmatodes*, the name by which it is now distinguished, was given to it by the late Mr. Hey, of Leeds, who published some remarkable cases of the affection, and noticed one striking fact in its character—that is, its becoming, by ulceration of the skin, a bleeding fungus. Hence he has given it the name of *fungus hæmatodes*. The name is in some respects objectionable, for fungus is not necessary to the disease—it may exist and proceed to a fatal termination without ever assuming the fungoid character.

In this disease there is a deposition of a very peculiar substance—it is a newly-formed matter or tumor, like brain, in the cellular texture of any part of the trunk or limbs of the body; or there is a deposition of the same kind of substance in the interior of some particular organ, where it grows, and is developed as a tumor would be in the cellular texture elsewhere. There is this distinction between *fungus hæmatodes* and cancer—I think *fungus hæmatodes* much more commonly appears as a distinct newly-formed substance in the cellular substance than cancer. Cancer is more commonly seated in some organ—*fungus hæmatodes* generally appears as a tumor in the cellular substance of some part of the trunk or limbs. The substance which constitutes the tumor in these cases is particularly characterized by two circumstances—the softness of its consistency, in which it resembles brain—and the admixture of it with a greater or less



quantity of blood, generally in a coagulated state. In colour and consistence there is often a very close resemblance indeed between the newly-deposited substance in fungus hæmatodes, and the medullary or cortical part of the brain: it is soft, and breaks under slight pressure of the finger. It has sometimes been described as a greasy sort of matter. It is greyish, white, brown, or reddish in colour, and very often a diversity of tints is observed in various parts of the same tumor; very commonly coagulated blood is intermixed with this soft brain-like substance. The coagulated blood is found either in streaks or in spots, or in considerable masses disseminated through the substance. Sometimes very large portions of blood are found in it—not uncommonly the whole of the texture is more or less tinted red or brown with blood. There are sometimes cells in the interior of the tumor, containing either fluid blood, or serum.

[The lecturer here presented two preparations, and remarked that they were very good specimens, shewing that kind of intermixture of coagulated blood with the soft substance to which he alluded. One was a tumor taken from the kidney—the other was a specimen of a similar kind, where the tumor had been developed on the surface of a bone.]

The tumor of fungus hæmatodes advances to the surface: when it comes near to the skin, in consequence of the soft nature of the substance which constitutes the tumor, and the frequent admixture of blood in large quantity, it presents a very peculiar feel—a feel of elasticity quite contrasted with the incompressible hardness of cancer. Nay, the softness sometimes goes so far, that a sense of fluctuation is imparted on examination; and this is so deceptive, that not uncommonly the most experienced persons have been deceived by it, and have punctured such tumors under the idea that they contained matter or other fluid. When it approaches the surface, it distends the skin, which becomes tense and shining, and assumes a red colour; after this it is elevated into a nipple-like prominence, which ulcerates, and gives issue to a soft, ragged, grey-looking fungus, from which a thin ichorous fluid discharges in large quantities, or from which copious bleeding takes place. Then it is that the disease properly deserves the name of fungus hæmatodes. The ulceration increases in circumference, and the protrusion of the fungus augments—sometimes the parts slough, and their separation is followed by considerable hæmorrhage. In the progress of the affection and its advance to the surface, and during the ulcerative stage, great pain is experienced, constitutional disturbance arises, the pulse is accelerated, the patient is restless at night, the tongue is white, the stomach and bowels

are disordered; and from the progress of this kind of unhealthy state of the system something like the condition of cancerous cachexia supervenes, from which, together with the effects of the local complaint, the patient ultimately sinks. When we come to examine the body, we frequently find disseminated through the internal organs the same kind of depositions as those which formed the original tumor; tubercles in the liver, lungs, and various other internal parts, as the brain, and even the bones, consisting of a soft substance more or less tinged with blood, exhibiting various hues, differing only from the secondary deposition that occurs in cancer in being softer in their texture. With respect to the secondary depositions, and even with respect to the primary tumor of fungus hæmatodes, I may observe, that when you make a section, and scrape it with the handle or blade of the knife, you squeeze out a sort of cream-like substance; but in other instances the original tumor is firm in consistency. You may have the genuine character of fungus hæmatodes without the brain-like texture, that is, you may have streaks of blood in the same kind of texture that I described, except that the fibrous parts predominate over the softer, and thus the tumor is firmer in consistence. This is a specimen [exhibiting it] of secondary tumor in the brain. The interior of it, you observe, is made up almost entirely of blood.

Fungus hæmatodes very often appears, as I have mentioned, in a primary form, as a tumor in some part of the trunk or limbs, but it also affects primarily a great many organs of the body;—the eye, the skin, the lungs, the liver, the kidney, the ovary, the breast, the prostate gland, the bladder, the testicle, the mammary gland of the female, the bones, and the muscles. These are parts in which fungus hæmatodes may arise primarily and in a secondary shape too; in fact, when you have tumors formed subsequently to one of these primary affections, they may shew themselves in almost all the organs of the body. This is a very fine specimen [presenting the preparation] of fungus hæmatodes growing out of the substance of the tibia just below the knee-joint, and this too [a second preparation], to which I have before pointed, is a specimen of fungus hæmatodes growing out of the femur just above the knee-joint. The primary disease here [shewing it] was in the testicle of a child, and there are on the table several examples of secondary tumors in the brain.

Now the causes of fungus hæmatodes are at all events as obscure, if not more so than those of cancer. How, indeed, can we explain the origin of the disease, and the circumstances that produce it, when we see the disease developed in the eye of an infant a few weeks or a few months after birth, and



proceeding to destroy the child ; this taking place in an infant that in other respects may be perfectly healthy.

As to the distinction between fungus hæmatodes and other affections, it has been, as I have already mentioned to you, confounded with cancer, though I think the leading circumstances in the two diseases are in many respects strikingly dissimilar. In the first place, there is a great difference in the age of the subjects affected with these two diseases. Fungus hæmatodes occurs frequently in young subjects. In the eye it very commonly occurs under the age of ten years; and in various forms it may take place at all ages prior to that in which we are accustomed to observe the development of cancer. It may come on in an adult at any age, but it is comparatively rare that fungus hæmatodes attacks a person at the same period of life at which cancer most frequently takes place. Then there appears to me to be a strong contrast between the cartilaginous texture and the incompressible hardness which characterize schirrus, and the brain-like softness which denotes fungus hæmatodes. Fungus hæmatodes, as I have already mentioned, comes on much more frequently as a distinct tumor in the cellular texture in various parts of the body;—cancer is rare in that form; it is almost invariably seen to originate in some particular organ. Fungus hæmatodes is more apt to multiply itself externally;—in cancer, although we observe the formation of cancerous tubercles around the original swelling, we usually find that there is no external cancerous affection, except in the original tumor, and the glands that become affected as a direct consequence of this; but it is by no means uncommon to have one or more tumors of the fungoid class in other parts at the same time.

With respect to the *treatment*, I have nothing more satisfactory to offer than the observations that I made respecting cancer—and these were unsatisfactory enough. Treatment is here unavailing, except so far as we are able to administer to particular symptoms. When ulceration takes place, and dreadful suffering comes on, we can only resort to the local and general use of opium. The question of operation here comes to be considered, but there is still less encouragement for its performance in fungus hæmatodes than in cancer. We might suppose that the eye would be a favourable situation for the radical removal of fungus hæmatodes by operation. Now in certain instances, the eye has been removed when the fungoid disease has been completely confined to the interior of the organ, before it has protruded so as to form an external fungus, and when the external coats of the eye have been completely

healthy; yet the disease has returned under such circumstances. This is the tibia—[exhibiting it]—affected with fungus hæmatodes, taken from a gentleman who was under my care. He was about 22 years of age, stout, and nearly six feet high; not a particularly healthy-looking person in the countenance—that is, he was rather of a whitish, pallid, pasty look; but he was otherwise in health. He was affected with pain and stiffness about the knee-joint, at Christmas, three or four years since. On new year's day he was at a party, and having complained of the pain he was told it was rheumatism, and was advised to dance it off. He did dance accordingly, and was able at that time to use the limb freely. He was sensible, however, of some degree of swelling about the knee, but followed his ordinary avocations, and went back to Cambridge, where he was a student. There the local affection soon became much more considerable, and he returned to town. I found a well-defined tumor just below the knee, and a general enlargement in that situation, which led me to suppose that something was wrong there. The disease went on rapidly, and a tumor arose below the joint. It projected externally, and assumed such a form, and fluctuated so distinctly, that, in consultation with another surgeon, we decided that it ought to be opened; and we punctured it to let out the matter—but no matter came. We were then perfectly satisfied of the nature of the affection. A fungus shot out from this opening, but it did not become very considerable. As it was then evident that the disease was fungus hæmatodes, the only question was whether amputation should be performed. Farther advice was had recourse to, and it was decided that the limb should be amputated above the knee. I accordingly performed the operation, and on the sixth day after it he felt himself remarkable well, and was sitting up in bed, enjoying himself with a friend who had visited him. He composed himself to sleep as usual; but during the night the bell rang violently, and when the nurse came down she found him bathed in blood and dead. The ligature had come off the femoral artery, and no union having taken place, he bled to death. On examining the body, there was no internal disease, except a single tubercle of fungus hæmatodes on the edge of the liver; but the glands of the groin were already in a state of incipient fungus—that is, they had the white medullary appearance which is characteristic of the disease. There was a large hole at the head of the tibia, which had been the original seat of the fungoid disease; and on examining the muscles at the back of the leg, a large deposition was found to have taken place, with which all the soft parts were completely penetrated.

The gentleman died in April; the disease, as I mentioned, having commenced at the beginning of the same year.

I was sent for, a good while ago, to a great distance in the country, to see a clergyman who had got an enlarged testicle, which his medical attendant had refused to remove, assigning some reasons why he would not perform the operation which led the gentleman to conclude that he was left to die. He sent for me, and I found an enlarged testicle, the character of which, when I saw him, was by no means very decided; but I have no doubt that it had possessed a well-marked character at an earlier period, for the medical attendant, whom I knew, and who is a cautious man, had considered it to be hydrocele, and punctured it. So satisfied was he, from its feel, that it contained fluid, that, finding no fluid come away on the first puncture, he punctured it again. The tumor, when I saw it, had not that elasticity that would have led me to infer that it was fungus hæmatodes. The circumstances that induced the medical gentleman to refuse to perform the operation, was the enlargement of the spermatic cord. I was of opinion this arose from the weight of the testicle; and I did not consider it a sufficient reason against operating. I stated the reasons to the clergyman for and against the operation, leaving him to form his own determination, which was in favour of its performance. The enlarged cord turned out to be a simple thickening of the part; the testicle itself was of the firm description of fungus hæmatodes—that is, it was of a thick fibrous structure, with a good deal of coagulated blood disseminated through it, much in the manner of the tumor that I have pointed out. The gentleman got well, the wound healed, and he seemed perfectly recovered. He continued well about a year; no relapse or return of the disease took place in the wound itself, but at the end of that time he began to waste in flesh, and lost his appetite. He felt himself ill without having any very definite disease: getting worse and worse, till at last he died. The symptoms, so far as they were of a definite nature, rather pointed to some affection of the chest. He was not examined, but I have no doubt that he died from internal disease—that is, from a development of fungoid disease in some of the internal organs of the body.

You see by these examples, that the result of the operation is by no means favourable in cases of fungus hæmatodes; and there is certainly very little encouragement to perform it where the disease decidedly possesses that character.

#### *Melanosis.*

There is another affection on which I have a few words to say, that will detain us but a short time—it is, *melanosis*. This is a

disease very similar to fungus hæmatodes; the original nature of the new deposition seems hardly distinguishable from it; but at an early period the substance assumes a remarkably dark colour, looking as if, in fact, it were thoroughly penetrated with the blackest soot. Hence the name of melanosis has been given to it.

[Mr. Lawrence here presented several preparations, remarking]—Here is a splendid specimen of it, which I am enabled to shew you through the kindness of Mr. Langstaff. This is one of the most beautiful among the specimens in his large collection. If you looked at this, and did not know any thing of it, you would think it was a mass of sooty substance. In fact, the word melanosis, which is derived from the Greek adjective μέλας, black, denotes this striking circumstance in the disease—its black colour. Melanosis is a soft texture, originally very much like that of fungus hæmatodes. It destroys completely the texture of the part in which it is developed, and perhaps makes its way externally, becoming a fungus, from which a thick black matter distils. The disease is also developed in a similar form in various external and internal parts of the body. In that respect it resembles fungus hæmatodes. This is a specimen of melanosis [exhibiting a preparation,] which is, in fact, in the stage of progressive conversion into the black condition. You observe a white and medullary substance in one part, while it is beginning to be black in another.

Now I have chiefly seen melanosis as an affection of the eye. It is developed in the interior of the organ, makes its way out, and forms one of these dark fungoid masses; and if it be not removed in an early stage, it destroys the patient, by affecting the internal organs. This is a very beautiful specimen—[exhibiting it]—of melanosis in the early stage; instead of the clearness of the sclerotic coat, you have a mass of black substance. This was removed from the eye of a young Irishman, about 30 years of age; and, as far as I know, the cure was permanent; at least I saw him between one and two years after the operation, and he was perfectly well. This leads me to observe, that the operation may be undertaken in melanosis with a better chance of success than in fungus hæmatodes. In the early state of melanosis, when you can be confident that it has not extended beyond the original seat in the eye, there seems to be a chance of permanent cure by removing the disease.

In this other preparation which I have pointed out to you before, you see the progress of conversion from the fungoid to the melanoid state, in an eye where the disease had existed longer, and where all traces of the natural structure of the organ is lost—I performed the operation in the hos-

pital, and the patient died about ten or twelve days after it. His liver was enormously enlarged, and filled throughout with melanoid depositions. This is a specimen cut through. Here are large masses of a black substance scattered through the liver, which is itself greatly enlarged: it is the liver of the same man whose eye was extirpated. Here also is a specimen of melanosis in the sternum and ribs, from Mr. Langstaff's museum. This is a very fine specimen of melanosis of the kidneys, where you see the black substance deposited in small spots through the whole of the texture. I think it is the kidney of an ox.

[Mr. Lawrence then handed round a number of engravings, illustrative of the various melanoid appearances which occurred in the eye, the skin, the liver, the lungs, the heart, the pancreas, and external covering of the intestines of an individual on whom Mr. Wilson, of Manchester, operated, for melanosis of the eye; and concluded by remarking, that it must be obvious that in melanosis the only chance of successful treatment must be in the early removal of the disease, when it was yet in its primary stage in the organ in which it was first developed.]

to D.S.

#### PHYSIOLOGY AS CONNECTED WITH ATMOSPHERICAL INFLUENCE.

By HARDWICKE SHUTE, M.D.

[Continued from page 835, Vol. V.]

##### *Irritability and Sensibility.*

WE have already given our reasons for entertaining the opinion that the oxygen expended in respiration is converted, by an animal action, into an animal principle, and that this principle is essential to the continuance of living action, because necessary to that perfection of the animal structure upon which every living action is dependant. We have also, by an inquiry into the nature of the connexion which subsists between the structure and the function of animal matter, been led to the conclusion that oxygen, or rather the animal principle into which the oxygen is converted by the process of respiration, is essential to the continuance of living action, because necessary to the continuance of that property which has been denominated irritability, and which imparts to animal matter its capacity of being excited to action by an appropriate stimulus. Do the several phenomena of life

and of living action admit of a rational explanation consistently with this view of the subject? We are disposed to answer the question in the affirmative, because the property of being excited to action by an appropriate stimulus "is not confined to any particular form of organization—as nerve, muscle, or blood-vessel, but exists in every organ, simple and compound;" and because the phenomena of living action do not appear to be irreconcilable with the proposition, that the irritability of animal matter is in all structures the same. "The irritable fibre, improperly called the muscular fibre, pervades, in our opinion, all organized matter. On it depends organic motion, sensation, and even life; and on it the bodies that surround it continually act, by stimulating it and forcing it to contract. It is of this fibre that I am about to speak, and of the laws that are the consequence of the irritability it is endowed with."

Having thus declared ourselves the advocates of a doctrine which, in the opinion of modern physiologists, has already been weighed in the balance and found deficient, we are imperatively called upon to shew, either that the facts upon which this opinion is founded have, by their misinterpretation, led to an erroneous conclusion, or that the original error consisted, not in the facts, but in the mode of explaining them. Now the opinions of modern physiologists are, it is well known to the reader, much opposed to this view of the subject; and therefore it becomes our duty to inquire how far such opinions are entitled to our assent.

"The more correct opinions of the present day, for which we are in a great measure indebted to the sagacity of Haller, have led us to conclude," says Dr. Bostock, "that all the appropriate actions of the living system may be referred to the two classes of motion and feeling; and that these depend upon two principles inherent in the body—contractility and sensibility; the one seated in the muscular fibre, the other in nervous matter. To the action of one or other of these principles every corporeal change may be ultimately referred; and it is through their immediate operation that all the functions are performed." Having stated that the irritable fibre pervades all organized matter, it is almost unnecessary to add that we are opposed to any doctrine which recognizes



sensibility as a distinct property of the animal fibre. Now "the more correct opinions of the present day are, in our judgment, so nearly allied to error as to involve a contradiction, and be wholly irreconcilable in the phenomena which they profess to explain." If the functions of the animal body are dependent on "a principle seated in nervous matter," there ought surely to be nervous matter for the principle to be seated in; and yet the advocates of this doctrine are, with no little inconsistency, somewhat offended at the bare idea of nervous matter being imagined to exist in all animals. "In order to prove that the latter is the case, it is only necessary to bring forward one unequivocal example of a secretion being produced when there can be no intervention of nervous influence; but of this we have numerous examples in all the various classes of the lower tribes of animals, in which no nervous system has yet been detected. To assert that these animals have a nervous system because they exercise those functions which have been generally supposed to be effected by means of the nerves, when no organs of this kind can be detected, and when the animals are of such magnitude as that their structure can be distinctly examined, is a mode of reasoning which I conceive to be so palpably incorrect as to require no formal refutation." It is obvious, therefore, that the more correct opinions of the present day are, if applied generally, erroneous; and it follows that the fundamental principles upon which the structure of modern physiology has been raised are unsound, because partial in their application, and unsatisfactory, because inadequate to the object proposed. The lower classes of animals are, it may be said, exceptions to, but not subversive of the general law. "Now an exception is part of the thing granted, and must be conformable and not repugnant to the grant, for then the exception is void." An exception, "of which we have numerous instances in all the various classes of the lower tribes of animals in which no nervous system has yet been detected," is so extensive in its application as to constitute a law of itself, and must be so considered until it is shewn that such exception is a part of, and not repugnant to, the original proposition. If sensations be considered as the exclusive property of nervous matter, the fact of sen-

sation occurring without the agency of that matter is not an exception which leaves the original proposition unimpaired, but is subversive of, because wholly irreconcilable with it. But, says the physiologist, the lower classes of animals are unendowed with sensibility, because unsupplied with a nervous system. Is it surprising that "physiology is still, with a great many persons, and in almost all books, a work of the imagination," when the fundamental principles of the science are made to rest upon so questionable a proposition? a proposition which, if admitted, still offers no explanation of the undeniable facts that a nervous system has been imparted to the superior animals for other purposes besides that of contributing to their sensibility; and that such purposes are, in the inferior animals, accomplished without the aid of nervous matter. There is, says another physiologist, no analogy between the different classes of animals; a proposition which, if admitted, amounts to a tacit acknowledgment that the science of modern physiology is founded on principles so partial in their application as to be wholly irreconcilable with the phenomena which they profess, and ought to explain. We are now, it must be remarked, adverting to a subject of no little importance—a subject which constitutes the basis of every physiological argument, the fundamental principle with which every physiological proposition must be reconciled; and it follows that the whole science of physiology is more or less involved in the truth or error of the conclusions to which the discussion of this subject may lead us. If sensibility is the exclusive property of nervous matter, and there are whole classes of animals in which no nervous matter has been detected, or can rationally be presumed to exist, it is obvious that a physiological system, which recognizes a distinct property of nervous matter as one of its fundamental principles, must, both in its detail and origin be imperfect, because inapplicable to a large portion of those phenomena which it professes and ought to explain. If, on the contrary, sensibility is allied to that property which gives to all living matter its capacity of being excited to action by an appropriate stimulus—if it is, in other words, merely the term by which we express the co-operation of the mind with the irritability of animal matter—the action of the



mind itself being dependant on the same property, it is obvious that the phenomena of sensation do not involve the immediate operation of a distinct property residing in nervous matter, and therefore do not involve the conclusion that the phenomena of living action, such as they occur in all animals—that is to say, both in animals which have and have not a nervous system, are irreconcilable. In order to establish our fundamental proposition, we shall first endeavour to shew that the property which gives to muscular fibre and to nervous matter the capacity of being excited to their appropriate actions, is the same.

We have seen that the animal principle generated in respiration is, when united with the animal structure, a concurrent cause of its irritability; and we are now called upon to shew that the nervous matter derives its capacity of action from the same source. "This function," says Dr. Kellie, "I apprehend to be respiration; between which and the energies of the nervous system a very intimate connexion is maintained through the changes produced on the blood during the pulmonary circulation. This dependence of the brain upon the properties of the blood maintained by respiration, is evinced by a great variety of observations." The actions of the heart and of the brain are equally dependant on a supply of arterial blood; and the blood returns from its circulation through these organs equally deprived of its arterial character. Can there be a rational doubt that the blood is transmitted to these organs for the same purpose, when we have such satisfactory evidence that the blood in its circulation through these organs experiences the same change, and is deprived of the same property? Can there be a rational doubt that the property of which it is thus deprived is that property which it had acquired in the process of respiration, when we find that the blood equally loses in its circulation through the heart and the brain the power of supporting their actions, and equally recovers that power in its circulation through the pulmonary organs? If the blood imparts to different organs the same property in support of their actions, if the same property is expended by those actions, is it rational to suppose that such property contributes to the support of those actions in a dif-

ferent manner, or that the property to which it gives rise is the same in origin but different in character? If the motive and sensitive organs derive from arterial blood the same property, these organs ought of course to be affected in the same manner by the presence of blood which can no longer supply that property. If the actions of these organs are affected in the same manner by the absence of this property, is it rational to suppose that they are affected in a different manner by its presence? "From the suspended or imperfect respiration, those changes," says Dr. Kellie, "by which the blood is fitted for maintaining the activity of the sensorial system are interrupted; this imperfect blood circulating slowly through the brain directly impedes its functions, and so diminishes the excitability of the motive and sensitive organs that they become torpid." If the excitability of the motive and sensitive organs dependant on the brain be thus debilitated by the interruption of the same influence, is it rational, I ask, to suppose that such excitability is different? It is sufficient for our purpose to say that the fact is undeniably a stronger argument in favour of the identity than of the dissimilarity of the properties "seated in the muscular fibre and in nervous matter."

We have seen, in a former part of these observations, that the irritability of the heart is maintained by a due supply of oxygenized blood; that is to say, by a due supply of the animal principle generated in the lungs; and yet our last argument rests upon the fact that the irritability of the motive organs is dependant on the brain. Is, then, the irritability of the motive organs, as severally derived from the respiratory or nervous systems, a different property? Certainly not! If the fact of this property being thus different in origin is no proof of a difference of character, how, it may be asked, can the identity of origin be an argument in favour of the identity of the principles resident in the muscular fibre and nervous matter? We admit, without hesitation, the force of the argument if the proposition upon which it is founded be correct; but the fact of the irritability of the motive organs being derived severally from the respiratory, or nervous systems, is no proof that these systems supply a different animal property. If the property sup-

plied be the same, there is no reason why the irritability which results from that supply should be different. Are, then, the principles supplied by the respiratory and nervous systems the same? Are we to consider the animal principles supplied by the arteries and nerves, that is to say, the arterial and nervous influences, as the same—the same in cause and effect? We are of that opinion; and shall upon a future occasion, state our reasons for entertaining it.

The blood, immediately after its exposure to the influence of the atmosphere in the lungs, returns to the left side of the heart, and is thence distributed, through the ramifications of the aorta, to all parts of the body, for the acknowledged purpose of supporting the animal structure, and for the obvious purpose, in our opinion, of supporting the irritability of the animal fibre through the medium of its structure. Now it was long the opinion of physiologists, that respiration did not impart to the blood the faculty of supporting living action, even for a short and transient period, without the concurrent aid of the nervous influence; but the phenomena of living action, such as they occur in the inferior animals which have no nervous system, and in those whose nervous system has been accidentally imperfect, or purposely injured, may be considered as justifying the inference, that the blood does acquire, in its passage through the lungs, the peculiar property of supporting living action. The expenditure of oxygen in respiration, and its absorption by the blood, coupled with the fact which we have endeavoured to establish, that the union of such oxygen with the carbon of the blood, and its immediate exhalation from the blood-vessels, does not satisfactorily account for the conversion of venous into arterial blood, fully justify, in our opinion, the inference, that this peculiar property of arterial blood is owing to something acquired in its circulation through the lungs. Now the blood transmitted from the left ventricle of the heart to the brain is, it must be remembered, that blood which has been recently exposed to the influence of the atmosphere, which has acquired, in its circulation through the respiratory organs a something, it has been denominated an animal principle, which is characterized by its property of supporting

living action; and it is therefore obvious that the blood transmitted to the brain has the capacity of imparting to it this principle; a principle, it must be remembered, characterized by the property of supporting living action. Now the blood which is transmitted to the brain arterial, returns to the right side of the heart venous, that is to say, deprived of the peculiar principle which it had acquired in the process of respiration, and immediately passes on to the lungs, where that principle is renewed. Can there be a rational doubt that the principle acquired in respiration is expended in its circulation through the brain? If the phenomena connected with the circulation of this principle through the heart and brain are precisely the same, is it irrational to suppose that such principle is expended in the same manner, and for the same purpose? Is not the fact admitted by physiologists? “The irritability of the heart is allowed to be inseparably connected with respiration, and we are of opinion that this connexion extends to all the muscles.”—“Respiration is a constant and uniform source from which the expenditure of nervous energy can be in some respect supplied.”—“The irritability of this, like that of every other muscle, can alone be maintained by duly oxygenized, that is to say, arterial blood.”—“The brain, it would appear, soon feels the want of the florid arterial stream, by which alone its energies can be maintained.”—“It has been ascertained by repeated experiments and observations, that the demand for oxygen in an animal body is proportioned to its expenditure by muscular exertion.”—“From the excessive languor and debility which is produced by intense thought, independent of muscular exertion, I am convinced that the blood undergoes a greater degree of deterioration by the specific action of the brain in a short time, than what it sustains by muscular motion long continued.”—“It was reserved for Bichât to offer a true explanation of this phenomena: he has very justly stated that, in consequence of the suspension of the respiratory function, the coronary vessels, by which the muscular structure of the heart is supplied, are compelled to carry black instead of scarlet blood, a fact which in itself is quite adequate to explain the cause of the heart ceasing to contract.”—“This

imperfect blood circulating slowly through the brain, directly impedes its functions, and so debilitates the excitability of the motive and sensitive organs, that they become torpid." Do we not collect from these several passages, that the excitability of the motive and sensitive organs is equally derived from the lungs, equally dependent on the respiratory changes of the blood, equally expended by the action of muscular fibre and of nervous matter, equally impaired by the interruption, and equally restored by the renewal, of the principle generated in the respiratory organs? Now the fact of the animal properties denominated irritability and sensibility being dependent on the same animal principle, is not in itself any proof of their identity, inasmuch as the principle generated in the respiratory organs may, by the function of the brain, be so changed as to lose its original properties. It is sufficient to say on the present occasion, that the supposition is not very compatible with the foregoing remarks, since it is obviously admitted by physiologists, that the principles supplied by the respiratory organs, and by the brain, equally contribute to the support of animal irritability. The facts above stated may fairly be considered as justifying the conclusion, that the dissimilarity of the animal properties, denominated irritability and sensibility, cannot be inferred by modern physiologists from their difference of origin; and that the property of sensibility is not, as far as the circumstances connected with the primary cause of this property may affect the question, in any way irreconcilable with our original proposition, that the irritability of animal matter is in all structures the same.

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#### ANALYSES & NOTICES OF BOOKS.

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" L'Auteur se tue à allonger ce que le lecteur se tue à abrégér."—D'ALEMBERT.

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*Observations on the Pathology of Venereal Affections.* By BENJAMIN TRAVERS, F.R.S. and Senior Surgeon to St. Thomas's Hospital.

MR. TRAVERS having been requested by the Council of the Hunterian Society to contribute the annual discourse at

the close of his presidency, selected for his subject the pathology of venereal affections, and having embodied his opinions, has presented them to the profession in a volume, small indeed in size, but containing many valuable observations, and much important inference.

Venereal affections are considered by Mr. Travers, as by most other writers, under the two general heads of gonorrhœa and syphilis. Gonorrhœa he regards as capable of being produced by simple inflammation caused by mechanical or chemical stimuli, and therefore as not necessarily implying the presence of any specific quality in the matter. A purulent discharge from the urethra or vagina, the result of inflammation, from whatever cause, is capable of communicating the irritation to other mucous surfaces, either of the same or of another individual. The susceptibility of others, however, to its impression varies extremely in different instances, and even, where strong at first, appears frequently to diminish after a time; a first gonorrhœa being generally more virulent than those which follow, and some after repeated attacks at length ceasing to receive the infection when applied under the circumstances in which it had formerly been readily communicated. Another fact worthy of being borne in mind is, that an individual—at all events a female, may be the passive medium of communication, she herself not suffering from the disease, when, for instance, she cohabits at a short interval with a person who is diseased, and afterwards with one who is sound. In cases of this nature, it is not unfrequent for a man to accuse the wrong party: thus infection may be received of one, and not developed till the excitement of subsequent intercourse, which occasionally hurries on the inflammation; nay, the original source of the purulent discharge so produced, may not have been gonorrhœa commonly so called in either of the females with whom he has cohabited. Thus, says Mr. Travers, "I have known a married man, who had an illicit intercourse, finding himself clapped, and well knowing the chastity of his wife, indignant at his mistress's infidelity; upon which the accused party, deeply hurt at the imputation, has demanded to undergo a professional scrutiny, and has thus cleared herself of the charge. So far as examination can be



relied upon, it has established her soundness. Now, the man having intercourse with his wife and his mistress, and with these alone, it follows that he had become inflamed with the co-operation of his mistress upon the leucorrhœal secretion of his wife, whose sickness had been his apology, 'in forô conscientiæ,' for dividing his attentions; and further, that he had not communicated the disease to his mistress."

Gonorrhœa, it will be observed in these remarks, is understood to imply the purulent secretion which may arise from the common causes of inflammation, and so long as the surfaces remain unbroken, it is the opinion of our author, that no poison is generated. Much of the difficulty attending this part of the investigation he holds to have arisen from the idea, that either gonorrhœa or sores are the product of a particular virus, and that a gonorrhœa necessarily communicates a gonorrhœa, and a sore a sore. This, Mr. Travers maintains, is altogether erroneous; his position being, that inflammation is excited by matter from the inflamed follicles of an unbroken surface, as well as by that from an ulcerated surface; and that "the difference of its effects upon the party who receives it, depends exclusively upon absorption or non-absorption, *i. e.* the formation or absence of a sore, a circumstance often accidental."

If the smallest abrasion take place so as to admit of the absorption of matter, a sore follows, the secretion of which in its turn may also be absorbed. Such absorption, however, is not an invariable consequence, at least so far as the production of any specific appearance is concerned. According to this view, it will be perceived, that the existence of a new surface, and the absorption of its secretion, is made the ground of distinction between simple and specific disease; and further, that if an individual has gonorrhœa without any ulceration about the genitals being produced, he is not capable of having any secondary symptoms; but if there be excoriation, and this form an ulcer, the matter from such ulcer is capable of producing secondary symptoms; or perhaps a simpler mode of expressing what we conceive to be Mr. Travers' opinion is this, that the matter of gonorrhœa is capable of giving rise to

secondary symptoms by its absorption, and that the reason why we do not more frequently see this effect to result is, that such matter is generally applied under circumstances not admitting of its absorption, *i. e.* to the unbroken surface of a mucous membrane. "The absence of secondary symptoms in pure gonorrhœa depends, therefore, not upon any difference in the quality of the matter, but upon a law of the animal economy, that the inflammatory secretions of the sound surface are not absorbed into the system."

Gonorrhœal matter is regarded as the source of those venereal symptoms which follow superficial ulcerations, the distinguishing feature of such sores being circularity and flatness, without induration. They are seldom solitary, and are most frequent at the angles of reflection between the layers of the prepuce, and about the loose investments of the glans. They are indolent, and though they clean readily; yet they heal with reluctance. We should have stated, that affections of distant parts frequently take place in simple gonorrhœa, but these, when they occur, are regarded as sympathetic merely, having no character but that of simple inflammation, whereas the secondary symptoms of the gonorrhœal sore are held to be as distinctly morbid as those of syphilis. They consist chiefly in superficial and diffuse inflammation of the velum palati and uvula, with spots of lymph and shallow ulcerations; of cutaneous affections, slighter and less varied than those of syphilis, assuming most frequently the papular and squamous form. The conjunctiva sometimes inflames, and the membrane of the nares even ulcerates; the flat bones become tender, but the periosteum seldom "inflames to deposition," unless the patient be exposed to the additional influences of cold and mercury.

Mr. Travers entertains no doubt of the Egyptian ophthalmia having been the result of the direct application of gonorrhœal matter to the eye, and asks, "would not the matter secreted by any other acutely inflamed surface, if confined in the folds of the conjunctiva, induce similar consequences?"

In the treatment of gonorrhœal sores an alterative, but not a full action of mercury, is commended, and the same medicine in the form of Plummer's pill,



the oxymuriate, or hyd. c. creta, is advised in the secondary state of the disease, together with sarsaparilla.

"The indication of treatment is two-fold, alterative, and tonic; if much pain and irritability be present, a sedative should be added. The readiness with which the disease yields to this plan, steadily supported, it is most gratifying to witness."

The second part of the "Observations" before us relates to Syphilis, a term which Mr. Travers uses for the sake of rendering himself intelligible, not from believing that this form of the disease arises from a poison essentially different from that which causes gonorrhœa. But we prefer giving the author's own words on this point.

"The common notion prevails, that proper gonorrhœa, being a simple inflammatory secretion of the mucous membrane, and not acting as a poison upon the system, the lues or syphilis is altogether a distinct disease. Let us examine this opinion. I have said, that whilst on both sides the surfaces remain sound, no constitutional disease is discoverable. But before we decide that the matter secreted in gonorrhœa and in syphilis have no relation to each other, we must shew that the gonorrhœal secretion being absorbed into the circulation, as in the case of superficial sores, is incapable of producing constitutional, or as they are called, secondary symptoms. Now I aver that such a connecting link between these diseases exists, and is palpable to observation. I have already described the symptoms arising from the absorption of the gonorrhœal matter, and it cannot, I think, be denied that the resemblance is such to those of syphilis, as to establish their very intimate relation, if not their identity. If a constitutional disease be traceable through the medium of gonorrhœal sores in a subject hitherto immaculate, the next step in the inquiry is to determine the operation of a constitution already tainted with the poison of gonorrhœa upon sores of this description. Are not the natural secretions of the bowels, the skin, and the kidney, influenced by the deranged state of the constitution? Are not the morbid discharges from simple wounds and ulcers, having their origin in casualties, also subject to vitiation from a similar influence? We know that the unhealthi-

ness of the matter of ulcers and suppurating surfaces, of whatever description, is constantly and truly referred to a prevailing morbid state of the system. Thus, if a poisoned habit contracts a sore, though the sore may have been caused by an accidental læsion of the skin, it becomes at once contaminated, and secretes a virus possessing properties not observed to belong to the secretion of a fresh and healthy system: the property, for example, of exciting upon a new surface an inflamed vesicle or pustule, which is followed by an excavated ulcer, instead of a superficial, raised, or level sore, and which runs into phagedenic ulceration, whether on the glans penis or the tonsil; of affecting parts of the system not within the ordinary range of the milder poison, as the iris and the periosteal membrane; of exhibiting cutaneous eruptions peculiar in colour, figure, &c., and differing somewhat in other respects, though that remains for future research to determine, from the class to which they respectively approximate."

From these observations, it appears that Mr. Travers looks upon the gonorrhœal and syphilitic poisons as the same in kind, and differing only in the extent and mode of their manifestation. Gonorrhœa is, in the first instance at least, purely local; but in syphilis the sore is held to be "as much constitutional as local;" and though it sounds rather paradoxical, the opinion of our author is, that the *primary* sore is a *secondary* effect—the production of a constitutional influence of the venereal poison. In this way a sore of *any kind*, on the genitals of a person whose system is impregnated with the poison of gonorrhœa, is capable of giving rise to a secretion which shall communicate syphilis. Again, however, we shall quote the words of our author, as contained in the following conclusions:—

"1. That absorption does not take place from sound surfaces, and therefore the poison of gonorrhœa, if it be one, is not developed in the system. In the very rare cases in which constitutional symptoms follow gonorrhœa in the absence of a visible sore, I refer their existence to absorption from an ulcer in the urethra.

"2. That gonorrhœal matter, though apparently the simple secretion of an inflamed surface, is capable, when ab-

sorbed into the system, as from sores, of acting as a poison in the production of constitutional symptoms.

“ 3. That the venereal poison is essentially one; for analogous, secondary, or constitutional symptoms succeed to analogous primary sores, in systems previously healthy.

“ 4. That the distinction between the gonorrhœal and syphilitic orders of symptoms, primary or secondary, is demonstrative of the difference between the secretions of a system previously healthy and the secretions of a system already charged with a poison.”

A farther illustration of the extent to which our author regards gonorrhœa and syphilis as different grades of the same disease, is afforded by a supposed, —but not supposititious case. A man marries soon after the cessation of a gonorrhœa, and this shortly reappears, and is communicated to his wife. If, from neglect or reluctance to exposure, the female suffer the disease to continue till excoriation or sore follows, then the matter is absorbed, and, being elaborated in her system, becomes syphilis; exposing her to the liability of sore throat and eruptions, and her offspring, if she breed, to the usual secondary symptoms. In the same way, *mutatis mutandis*, a man communicating successively with females who have gonorrhœa only, may develop in his own system the more concentrated form of the venereal poison; if by accident, or otherwise, a breach of surface be effected.

Mr. Travers is a strong advocate for the use of mercury in this form of the disease, though he of course allows that the constitution is not at all times fit for its exhibition. The states which contra-indicate it, are excessive inflammation on the one hand, and excessive weakness on the other. The first is to be met by ordinary means, the second by sarsaparilla; or if a higher tonic be indicated, by cinchona. The decoction and compound tincture of the yellow bark are, according to his experience, preferable to quina. Often these remedies may be given simultaneously with mercury; and this combination is spoken of in terms of great commendation. We observe that Mr. Travers speaks of the oxymuriate as a gentle preparation, or rather as inducing a gentle form of mercurial action; and on this account he classes it with the

hydrar. c. creta, as applicable to cases where great debility is present; and, in fact, these formulæ are given “as a test of the capability of the system to bear it.”

This brings us to the third and last division of the subject; namely, the injurious effects resulting from the combined action of the venereal poison and of mercury on the human frame; subject to yet farther aggravation from scrofula, from exposure to cold, and from intemperance. After a *coup d'œil* at these, Mr. Travers describes at length a peculiar form of disease, which has fallen under his particular observation, as surgeon to St. Thomas's Hospital, and cases of which have at different times been published in our reports from that institution. With this important narrative we shall terminate our extracts.

“ I shall avail myself of this opportunity to notice a peculiar and very formidable distemper, arising from the unlimited intercourse of young and delicate girls of scrofulous temperament, chiefly with foreign sailors, many of them lascars or men of colour, frequenting the brothels in the vicinity of the East and West India and London Docks. The district of St. Catharine's (until recently converted into docks) was the most notorious for the propagation of this pestilence, and a place in that quarter called ‘Swan Alley,’ has given the sore that appellation in St. Thomas's Hospital. The subjects of the disease are almost exclusively females. I remember only one instance of a boy similarly affected, in whom the disease went unchecked to a fatal termination. The girls are slender, with very thin fair skins, and often light hair, and generally from 15 to 25 years of age. They have been a few months before decoyed by the Jews who keep these houses, and are systematically on the look-out in the great neighbouring thoroughfares. The girls, newly arrived in London, while in search of lodgings until they procure places, become victims to these miscreants.

“ They receive the visits of as many men as there are hours in the day, and are supported on scanty food and abundance of gin. Their visitors do not always restrict themselves to natural connexion. When they become constitutionally ill, their keepers send them to the hospitals. The Magdalen ward of St. Thomas's is seldom without one or

more of them. They have been only two or three days in the house, when the character of the sore displays itself; for by reason of the previous illness they are rarely detained in their occupation long enough for the ulcer to have assumed its genuine features. It is a circumscribed irregular ulcer with an inflamed blunt edge, usually situated at the lower angle of one labium, or in the cleft of the nates. When the sore inflames, its edge acquires a dark crimson colour to some distance around; the surface is covered with a deep, tenacious, ash-coloured slough, and it extends so rapidly, as to be increased visibly from day to day. It is generally attended with excessive unremitting pain, a very rapid and contracted pulse, great paleness of the surface, total failure of the appetite, and great depression of strength and spirits. It is, in fact, acute gangrenous inflammation. Where they recover, no secondary symptom of lues appears; nor is the disease in any degree contagious. The treatment now adopted seldom fails to arrest it, unless admitted in a very advanced stage, as after the sloughing process has been some time established, when the devastation is truly terrific. In addition to the slough of the pudendum, I have seen the entire lower opening of the pelvis deprived of its soft parts. The girl dies typhoid with a dry black tongue, and is first delirious, then comatose.

"When the pain is severe, and the disc of inflammation strongly marked, blood-letting is beneficial to both. I usually apply lint soddened in a saturated solution of the extr. opii, over this a poultice of linseed meal, and cover the whole with a fomentation flannel. This seldom fails to relieve, if not to remove the pain. The exposure of the sores and the change of dressings much augment it; the continued application of warmth and moisture as much abate it. After clearing the bowels with castor oil, I give a draught of camphor julep with a drachm of ether, and ten minims of the tinct. opii every four hours; and half a grain of opium additionally, if the pain is very urgent. If the slough is fast, and the ulcer extends, the surface is washed freely with the strong nitric acid, and it is remarkable that very shortly afterwards the girl expresses great relief. The London treacle poultice I likewise find an excellent application, covered by the fomentation flannel. The object to be looked to for directing

the application, is the colour of the surrounding skin; when this pales, the dilute nitric acid lotion, ten drops to an ounce of water, is the best application. Fresh eggs and milk, and as the stomach acquires tone, a mutton chop, and from ten to twelve ounces of port wine daily, are an appropriate support. The occasional repetition of the oil or the common enema should not be neglected under the habitual employment of opium.

"The strong acid must be repeated each third or fourth day, till the whole surface granulates. When the girl sleeps and takes nourishment, notwithstanding an immoderately quick pulse, she does well; and the sore, when once clean, heals rapidly under the dilute acid lotion and simple cerate. The bark is useful at this period, but very secondary to the opium, wine, and nutriment. The former should be gradually reduced. A lotion of the chloride of lime and caustic soda, three drachms of the first and one drachm of the last to half a pint of water, acts with magical celerity in clearing the sloughs in many cases; but I have not found it so applicable or efficacious during the stage of acute inflammation, as when it is subdued. I once saw mercury rubbed in to rapid salivation, with manifest acceleration of the destroying process, and the vital powers were further greatly sunk by it. I have seen the inflammation begin after the taking of half a dozen blue pills, one every night and morning, which had been prescribed upon the girl's admission for a sore, which was then small and indolent, in ignorance of its character and tendency.

"I have known a gonorrhœa return, which had been suspended during the inflammation, accompanied by an obstinate form of warty excrescences, but never discovered any symptoms of the venereal poison. The girls cohabit for weeks, or even months, upon a gonorrhœal discharge or excoriation; and I believe that the continued excitement to the affected parts—in constitutions half formed, yet exhausted by incessant stimulus, and the total disregard of cleanliness—induce, as soon as active ulceration commences, the gangrenous phagedæna. This character of the inflammation in its onset is sufficient to prevent the secretion of the venereal poison. Its effect is like that of a caustic to a recent chancre.

"I cannot admit that this sore results



from the irritation of the matter of gonorrhœa; and as little, that it is an affection altogether local and requiring only local treatment. It is sufficient answer to the first that gonorrhœa is not always present, and that it sometimes appears distinct from the pudendum, as on the ilia and abdomen, as well as consecutively to sympathetic bubo. One of the most formidable cases I ever witnessed was in this situation. With reference to the second point, it is by no means a warrantable conclusion from the occasional efficacy of local remedies in promoting healing, and repeated observation has satisfied my mind that the disease essentially depends on the existing state of the habit. I am quite ready to admit that material difference prevails in the symptom of pain, and that occasionally a state of torpor, amounting to apathy, prevails. But this is equally a morbid state, and these are the exception cases. That the abuse of spirituous liquor, that worst abuse which renders its continual excitement a substitute for nourishment, has much to do in determining this gangrene, is proved by the fact that a similar description of ulcer occasionally attacks young men; for example, sailors who have kept up a continued system of drunken debauchery after their return from a voyage, and others, without any affection of the genitals; sometimes appearing upon the limbs and sometimes upon the trunk of the body. I have seen precisely such an ulcer as that above described upon the abdomen of a young man, in circumference equal to that of a small plate, and the deep dense slough by which it was filled irremovable by applications of any kind."

The volume concludes with some remarks on the history of the venereal disease, in the course of which Mr. Travers expresses his belief that it did not come originally from America; he regards the disease as having undergone great change in its symptoms since it was first observed by the earlier writers; but that the poison is still the same, "one and indivisible." The essay, though short, is evidently the production of one who has thought much upon the subject. It evinces that partiality for abstruse research which characterizes the writings of the accomplished author; and thus requires considerable attention in the perusal. This we have bestowed upon it, and

trust that we have given, though a condensed, yet a tolerably correct and perspicuous view of the doctrines it contains.

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*Illustrations of some of the principal Diseases of the Ovaria, their Symptoms and Treatment: to which are prefixed, Observations on the Structure and Functions of these parts in the Human Being and in Animals.*  
By EDWARD J. SEYMOUR, M.D.  
With 14 Lithographic Engravings.

As we made the public acquainted with Dr. Seymour's valuable observations on the physiology and pathology of the ovaria, when they were delivered at the College of Physicians last year, we have no occasion to direct the attention of our readers to the subject on the present occasion. We think it right, however, to inform them, that the descriptions are now illustrated by a set of very finely-executed lithographic delineations, which it is not too much to say have never been excelled by any plates of the kind which have appeared. These engravings add very much to the interest of the work, and are published at so cheap a rate, as to shew that the design of the author has been to render them easily accessible—profitable to himself, at their present price, they cannot be.

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#### ON THE EXTIRPATION OF STEATOMATA FROM THE SCALP, &c.

By T. W. CHEVALIER, Esq.

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EVERY surgeon is aware of the inconvenience that frequently arises in the attempt to remove those small encysted steatomata which not uncommonly occur in the human scalp, and which appear to consist of one or more sebaceous glands enormously enlarged, and distended with a suety substance, little different from their natural secretion. The capsule of these tumors is often so exceedingly delicate and pellucid, that we can hardly ascertain its complete removal, unless by good fortune, or by skill on the part of the operator, it is extirpated entire; whereas, if the smallest portion of it should remain in the wound, the disease is liable to return.

In the uncertainty occasioned by the accidental puncture of one these cysts,



I have seen two methods employed; namely, the excision of a much larger quantity than necessary of the parietes of the cell in which the tumor was lodged, whereby the patient suffers more than is requisite in so trivial an operation; or else the introduction of caustic into the wound, for the purpose of destroying any portion of the capsule left behind, and of preventing union by the first intention; and in this case, the use of the knife might as well have been dispensed with, for it is always sufficient for the cure of these tumors, and sometimes the most eligible treatment, to puncture them with a lancet, and, having squeezed out their contents, to introduce into the cavity a portion of kali purum for a few seconds; after a day or two, the capsule comes away entire, and the wound readily and permanently heals.

A slight alteration in the form of the common scalpel, however, has enabled me to ensure the removal of steatomatous and other tumors of a similar kind, without the rupture or puncture of their capsules; and in general, the small inverted pyramid, or graduated compress of lint, with which I have dressed the wound in the first instance, has come away after a few days, leaving the part healed.

Fig. 2.

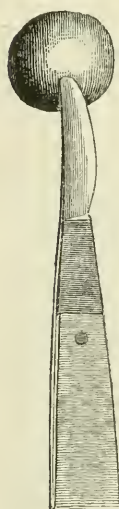
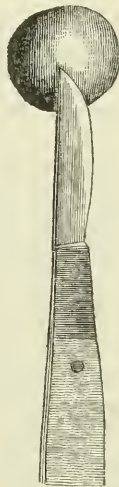


Fig. 1.



It is evident that the point of the scalpel, Fig. 1, pressing upon the ex-

ceeding narrow surface which supports it, will indent the elastic and delicate capsule under an equal degree of pressure, to a deeper extent than the wider extremity of the blade, Fig. 2. The former will, therefore, communicate to the hand, *ceteris paribus*, a less sensible resistance than the latter, and be so much the more likely to lay open the capsule, which it is also liable to puncture. Experience has shewn me that a round point, or rather a round edge, such as is represented in Fig. 2, will cut with equal certainty, truth, and precision, while the extent of its effect in every stroke of the knife may be far more accurately calculated, and more securely depended on, than that of the scalpel in common use, which indeed must often operate as a *single-toothed saw*, if I may use such an expression, rather than as a knife; and in all cases in which small tumors, either of delicate structure, or deeply imbedded in the neighbourhood of important nerves or bloodvessels, are to be removed, I have long been accustomed to prefer the former.

As I have had occasion to advert to the method of curing steatomatous tumors by the application of caustic, so as to effect the sloughing their cysts, I may be permitted to add, that I have employed, with success, a practice not very dissimilar for the cure of small and recent *ranulae*; but in these I have used the *argentum nitratum* after puncturing the tumor, introducing it only for a second or two, so as to obtain the obliteration of the cavity, not by its destruction, as in the former case, but by adhesive inflammation, acting precisely upon the same principle as in the cure of hydrocele by injection.

I have known caustics employed in the same manner for the cure of *ganglia*, but without any necessity; for if these tumors be large enough to produce inconvenience, they may in almost all cases be easily burst, by firm pressure made with a strong narrow splint upon the integuments immediately covering them; and by this simple means I have obtained the *instantaneous cure* of many *ganglia*, without any symptom of pain or inconvenience, and without any injury whatever to the skin.

62, Torrington-Square,  
April 2, 1830.

REMOVAL OF THE SUPERIOR  
MAXILLARY BONE.

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*To the Editor of the London Medical Gazette.*

SIR,

I REQUEST you will insert the accompanying statement in one of the earliest numbers of the Medical Gazette, and oblige,

Your very obedient servant,

JOHN LIZARS.

Edinburgh, 34, York-Place,  
12th March, 1830.

In Number 98 of the London Medical Gazette, you inserted the report of an operation which I performed in the Royal Infirmary, for the removal of a superior maxillary bone affected with a medullo-sarcomatous tumor in its antrum; but your reporter erroneously stated that the patient "had laboured under general dropsy three weeks previous to admission." I beg leave to inform you, in correction, that the time was three years; and that I consulted the physician, Dr. Sanders, under whose care she had been for the general dropsy, with regard to the state of her health, immediately prior to the operation. Indeed I am somewhat surprised that your reporter has not availed himself before this time, of the ready means for rectifying so palpable an error.

I performed the same operation on the 10th of January last, on a woman of 55 years of age, and was enabled to remove the whole disease. The patient was placed under my care by Dr. Simmons, of Dumfries, and she has this day left Edinburgh perfectly cured. As the steps of the operation were nearly the same as those detailed in No. 98, it seems to me unnecessary to recapitulate them. Little or no irritation followed the operation, and the incisions of the face united both kindly and thoroughly. This operation was proposed by me in 1826, in Part 9 of my Anatomical Work.

## THE LATE DR. WOLLASTON.

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*To the Editor of the London Medical Gazette.*

SIR,

IN the memoir of Dr. Wollaston, that lately appeared in your respectable publication, it is stated, that he was *senior wrangler* of his year\*. This is a mistake—it was his elder brother, the late Archdeacon Wollaston, of Southweald, in Essex, who had that honour. The Archdeacon was of Sydney, and was senior wrangler and first Smith's prizeman in the year 1783. He was afterwards (as the Cambridge Calendar informs us) fellow and tutor of Trinity Hall, and Jacksonian professor of natural and experimental philosophy.

Dr. Wollaston was of Caius College, of which he died the senior fellow; and as he went out in physic (that is, took his bachelor's degree in physic, without the intermedium of arts), he was precluded from any competition for University honours, which is limited to such as stand for the degree of bachelor of arts. This was a serious disadvantage in the education of a physician at Cambridge, which is of late, I believe, in some degree corrected.

Dr. Wollaston had a Tancred scholarship in physic when at the University; and as this requires that the holder should take the degree of bachelor of physic as soon as he may be of sufficient standing for it, Dr. Wollaston was by this means deprived of the high position in the mathematical tripos which, in all probability, he would have otherwise obtained.

No man ever existed who possessed a greater variety of accurate knowledge than Dr. Wollaston, or a more happy talent of applying it to the objects of his researches; and when to these we add the singular and innate keenness of his perceptive powers, and his powerful and comprehensive faculty of observation, to which every sense was eminently subservient, it is not surprising that his numerous and valuable philosophical labours should be stamped with a character which is so peculiarly their own.

I remain, sir,

Your obedient servant,

X. Y. Z.

\* On the authority of the Annual Obituary.—E. G.

ON THE

EFFICACY OF SUPPORT, AND THE  
LOCAL APPLICATION OF MER-  
CURY,*In Chronic Inflammation of Glandular Structures, but of the Testicle in particular.**To the Editor of the London Medical Gazette.*

SIR,

I BEG leave to direct, through the medium of your columns (if you have one or two to spare, and think them not unworthily occupied by these observations), the attention of the medical world to the reduction of chronic glandular enlargements, more particularly those of the testicle, by support and the local application of mercury. It is true this subject is not new; we have all seen numerous instances where the mercurial friction, &c. in these cases, have been of essential service; we have seen it disperse them; yet I think every one will admit that he has witnessed it also with a very unsatisfactory result.

We are indebted to Mr. Scott for the improvement which he has made upon the treatment of these cases. Nor am I unwilling, as an individual member of the profession, to acknowledge how much I am indebted to that gentleman for the success which I have found attendant upon the employment of mercury and support, agreeable to the method recommended by him. Indeed I believe I may say that I have not since met with a case of simple chronic inflammation, unattended with malignant disease, which has failed to give way, in a most satisfactory manner, where its application was admissible. In illustration of this, I have connected with these observations two cases of chronic inflammation of the testicle.

CASE I.—In August 1829, I was applied to by Capt. —, a strong athletic man, but of a constitution rather tending to scrofula, in consequence of a very considerable enlargement of the left testicle. He had just then arrived from St. Petersburg, after a very cold, wet, and tedious passage. The absolute necessity of his attending to the duties of his ship, prevented the opportunity of using such active measures as would have been advisable under more favourable circumstances. In a few days he

left England on another voyage, and returned again about the commencement of December, when he applied to me. He had one of the cervical glands enlarged to the size of a walnut, and softened; his skin looked of an unhealthy hue; he was irritable and nervous, and perspired copiously with the least exertion, and had lost flesh considerably. He had a constant, short, tickling cough; the tongue was furred, and the bowels inactive. He said he did not feel ill, yet it was clear that he was suffering under general functional derangement.

The testicle had increased to an enormous size—as large, I may say, as a well clenched fist; it was very hard and ponderous; he suffered no pain from it, nor indeed had he from the commencement complained of any, save the inconvenience produced by its weight, and which caused an uneasy dragging sensation along the cord, and numbness down the thigh.

It will be seen that he had been four months in this state, without the least prospect of amendment; his health was rapidly giving way, under the irritation and anxiety of his condition, when, on the 8th of December, I subjected him to the treatment recommended by Mr. Scott: that is, having first well washed the part with strong camphorated spirit, on a piece of lint, adapted to the size of the testicle, is spread very thick a cerate composed of strong mercurial ointment and soap cerate, of each an ounce, well rubbed down with a drachm of finely levigated camphor. This being adjusted, strips of adhesive plaster, for the triple purpose of securing it, preventing exhalation, and giving support to the testicle, are then applied; bracing it well up by attaching them first to the perinæum and then to the abdomen. These strips being liberally supplied, the whole is encased in leather, covered with equal parts of soap cerate and resin plaster, cut so as nicely to fit the part and combine the whole together. As there is a disposition in the plaisters to be drawn up from their attachment to the perinæum by the action of the abdominal muscles, this will be prevented by passing a tape through that part of the leather which is attached to the perinæum, and making it fast to the back part of the circular band of the suspending bandage.

On the 13th, the 17th, the 26th, and



the 31st, the plaisters were renewed. By the 17th, a very evident diminution had taken place in the enlarged testicle, attended with as great an improvement in the general health as I ever witnessed within so short a time. On the 9th of June (being just one month from the time of his requesting my attendance), with the testicle very nearly reduced to its natural size, and in the enjoyment of excellent health, he left London to enjoy the shooting season with his country friends.

I shall merely state that this patient took no mercury, as it is not my intention to comment upon the ability of being able to dispense with the administration of mercury in those patients who are generally the subjects of chronic disease. He took a drachm of the extract of sarsaparilla night and morning, and every third night five grains of cambooge, of scammony, and of the ext. of colocynth. The gland in the neck, above-mentioned, had entirely disappeared.

CASE II.—On the 13th December, 1829, I was desired to attend Mr. —, resident in the vicinity of the Commercial Road. I found him rolling in bed, from the agonizing pain of a swollen testicle. This attack was brought on by more than customary exercise. He had been the subject of an enlarged testicle now twelve months, and this was about the thirteenth or fourteenth time that, upon the least exciting cause, he had been necessitated to undergo the painful and never-ending ordeal of leeches and lotions, &c. I had never seen him before, and upon examination I found the left testicle enlarged, yet not so much so as in the former case. It was drawn up to the groin, and extremely sensitive to the touch. Two or three days had now elapsed since the commencement of the attack, during which time he had not slept, and had, as may be supposed, an attendant fever.

As active inflammation had again taken place in the testicle, I applied leeches, with frequent warm emollient poultices. He had a brisk purgative and an anodyne at bed-time. Under these means, on the 17th he found himself as well as he had always been after his previous attacks. I commenced now with the mercurial dressings, and with the pills and sarsaparilla, as in the former case. On the 22d and 28th of

December, and on the 2d, 11th, 19th, and 28th of January, the dressings were renewed. On the 5th of February I removed them for the last time. The testicle was now reduced to the size of the healthy one; he declared himself to be entirely free from all that miserable dragging sensation along the cord, and numbness of the thigh, which had so annoyed him during the last twelve months; nor did his general health fail to indicate the relief it had obtained from the cessation of local irritation.

I could relate many more of these cases, but I trust it is unnecessary. The success which has attended the above treatment has given origin to these observations, under the feeling that those who have or may have such cases, and have not yet tried this method of the local application of mercury with suspension, might, from these remarks, be induced to do so, and thus tend to the amelioration of human suffering.

I am, sir,

Yours, &c.

JAMES YORK, M. R. C. S.

High-Street, Whitechapel,  
30th March, 1830.

## MEDICAL GAZETTE.

Saturday, April 10, 1830.

“*Licet omnibus, licet etiam mihi, dignitatem Artis Medicæ tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso.*”—CICERO.

## UNPOPULARITY OF DISSECTION IN IRELAND.

It would be very desirable that on a subject of so much importance as that of providing for the anatomical wants of our profession, there should be as few misconceptions afloat as possible. Prejudices, we know, do abundantly exist in certain high quarters, as well as in the lowest grades of society; but we are sorry to add that some very mistaken notions are also to be found within our own professional pale. They are not, indeed, entertained by more than a very few individuals; but it were bet-



ter there were no shades of distinction, however slight—no varieties of opinion on the subject: we should have no schisms amongst us. For before we can reasonably expect to make converts to our views—these must be clear and well-defined—we must be agreed amongst ourselves, and well assured of their propriety, otherwise we only exchange error for uncertainty. What we would now more immediately advert to are certain statements of Mr. Guthrie, made in his first lecture before the college; and the concurrence in his opinions, expressed in the last number by our esteemed contemporary, of the *Medico-Chirurgical Review*. They will have it that none of the existing prejudices against anatomy arise from the practice of dissecting murderers; and the learned lecturer adduces, in confirmation of this opinion, a certain supposed or ideal state of things in the sister kingdom. We had better repeat his own words:—“In no country in the world is dissection more freely and fairly carried on than it is at this moment in the city of Dublin. Whilst it is endeavoured to be instilled into the minds of the profession here that it is because murderers are dissected that subjects are not to be procured, we find that the profession in Dublin take an opposite course; we find that they are fully convinced and satisfied that it has no influence upon the public mind; we find that there is no place where bodies are obtained so readily (they are obtained almost for nothing;) there is no fear of dissection; they are capable of doing as they please; yet we find them actually selecting the bodies of murderers; not only seeking them for dissection, but publishing, in the face of the whole country, the experiments performed on them. But if any ground of suspicion, that the prejudice depended upon the anatomizing of murderers were entertained, this would be most indiscreet, and might put a stop

to the freedom of dissection which at the present moment prevails in Dublin. We find, on the contrary, that they not only open these subjects, but perform experiments upon them, and publish the result in the newspapers. We see that they are not afraid of these descriptions going forth, and we may therefore reasonably and fairly suppose that there is an error upon this subject\*.”

All this certainly seems to be a very plausible argument—nay, it is quoted by our contemporary as “unanswerable”: it happens, however, to be a mistake, and the answer to it is simple and conclusive. Mr. Guthrie is not aware, or has been misinformed, of the actual state of practical anatomy in Ireland—how it stands in public estimation in that country. There can hardly be a more mistaken notion than to suppose the Irish apathetic, as they are here described, or that they look with indifference on the practice of dissection: very far from it: it is with feelings of strong repugnance that it is contemplated by the mass of the people; and all its frequency, and alleged publicity, have not succeeded in rendering it less abhorred in their sight. This we will prove to be the fact in the first instance, and then we shall trace it to its proper causes. Be it observed that we now speak of the people—the populace—the mass of the Irish community. The circumstance of some two or three hundred individuals of the better informed and higher classes voluntarily tendering their bodies for dissection, serves only to confirm our position; the express object of those friends of anatomy being the removal of existing prejudices from the minds of their fellow-countrymen.

It is not necessary to go far back for instances of the popular hatred with which dissectors, and all who are known to have any connexion with them, are

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\* See *Med. Gaz.* No. 119, p. 759-60.

viewed in the Irish metropolis. We have heard of houses being pulled down by a furious mob, upon bare suspicion, when a phrenzy was excited against their anatomical inmates by some untoward accident. But recent examples are most available. About the time of the universal panic inspired by the discovery of the Edinburgh atrocities, it is not to be supposed that Ireland slumbered in a state of philosophic indifference, or disregarded the horrible narratives then currently circulated; on the contrary, she sympathized fully with the general feeling, and, as is usual on such occasions, rumours were readily taken for realities—trifles light as air, for confirmation strong. Mr. Kirby's school, in Peter-Street, was beleaguered for many days, and laid under serious embargo, in consequence of a frolic played off on a schoolboy by some of the students. The urchin had made himself troublesome about the door, and was carried into the dissecting-room by way of punishment; but his companions who remained outside soon raised an alarm, and the house was speedily in danger of being pulled about the ears of the unlucky dissectors,—"the sack'em ups," as they began about that time to be denominated. The affair was at length arranged—but not without much difficulty—by the interference of the magistrates of police. Here the disturbance was mainly owing to the ideas vulgarly entertained about dissecting-rooms, and the dark deeds supposed to be done therein. In Dublin, just as in other cities of his Majesty's dominions, anatomists must proceed with fear and trembling; they are obliged to work by stealth—and stealth cannot escape suspicion, nor suspicion persecution; and perhaps there is as much of that persecuting spirit in the Dublin mob as in any other mob in the empire. Against resurrection-men, and that class of gentry, it

rages with peculiar violence: neither will it spare the softer sex, when suspected of being engaged in the service of "the surgeons." Not long since, two poor creatures who were observed carrying a coffin through an obscure street in the outlets of the city, were stopped short in their pious offices; the coffin, which contained the dead child of one of them, was wrested from their hands, and the miserable mourners narrowly escaped strangulation. Still more recently, we have heard of another outrage of a similar nature: an elderly woman who carried a box, the contents of which, it appears, she knew nothing about, attracted the attention of some idle boys. It happened to contain a small skeleton—a withered affair of some thirty years standing—which her master wished to have conveyed to his new lodgings. But the old lady seems not to have been one of the best of messengers; she diverged from her onward track, and speedily fell into harm's way. The box was soon scented—somebody got a peep into it, and raised an immediate hue and cry. In short, she was concluded to be the mother of a gang of resurrection-men—a second Mrs. Hare: she was dragged through the streets, and almost pulled to pieces—pelted with mud, and treated with every sort of cruelty, until she at length found shelter and protection in a police-office. Now be it borne in mind, that this was a portion and fair sample of the very same populace that extended their commiseration and tender mercies to the perpetrators of one of the most cruel and audacious murders that has disgraced any European city in modern times. The sawyer Hanlon was beaten to death with clubs in the open day, in a crowded street, by a band of combiners, in presence of at least a hundred witnesses. Yet evidence could not be procured by the crown, except by the temptation of a great reward.

Four of the villains were hanged and anatomized, "according to law;" and though, when the execution was over, it was generally admitted that the wretches had richly deserved their fate, yet the executioners of the gallows and the dissecting-room were involved in one common cry of obloquy—both were loaded with execrations. Every sort of hostile demonstration was exhibited by the daring mob assembled in York-Street during the Galvanic experiments and dissections. The College would undoubtedly have been stormed, were it not for the protection of a strong body of armed police;—as it was, many instances of insult and assault on professional gentlemen might be enumerated.

In truth, the pursuit of practical anatomy in Ireland is very far from being uniform and uninterrupted; comparatively, perhaps, with other cities, much in the dissecting department is done in Dublin; but it is by no means smoothly done, "fairly and freely," as Mr. Guthrie describes it; on the contrary, it is much more through evil report than good report. Scarcely a day passes in which the Irish newspapers do not contain some details of skirmishing and warfare between the retainers of the schools and the rabble. The resurrection men are daring and desperate, it is true, but they are not without their own grievances to complain of: to beat one of them to death, or shoot him, if caught near a churchyard, is nothing; it is supposed to be perfectly fair—quite good in Irish law; while any reprisal or proportionate reaction is magnified into a horrible crime, the press fumes, and the public are roused up. Such is no exaggerated account of the present state of things in Ireland. And we shall see that the causes are not at all difficult to be assigned. The public odium which attends the practice of anatomy is, in fact, owing to dissection being made

part of the punishment of murderers. Dissection is abhorred by the Irish public, as well as by the British, because it is performed on executed criminals; and dissectors (and by implication, of course, the whole profession) are unpopular, because they are the operators in the detested process. Any thing done to the dead body, by way of insult to the memory of the deceased, has ever been and must be odious in public estimation; the association is perfectly natural. Thus the burying of highwaymen and house-breakers at the cross roads—the interment of suicides out of consecrated ground—the practice of driving a stake through the body—gibbeting, and so forth, have ever been looked upon by almost every class with horror; and not less in Ireland, we may be sure, than in other countries, where superstitious feelings and the passions have so full a scope. Need we then describe how offensive dissection must appear to all who recollect that it is ordained by law as a *punishment* for the dead—the ignominious dead? Insult and vengeance are the spirit of this law, unless indeed we add, that it is also intended to strike terror into the living. As a means of instruction to the schools of anatomy, it is quite superfluous; in Ireland, particularly so, where of all countries it could best be dispensed with, insomuch that there it must assume the character of wanton outrage upon the dead. And if such be the feeling with which they contemplate the deed, how may we suppose they look upon the doers? As they do upon Jack Ketch, or on his not less disreputable coadjutor, the decapitator of Thistlewood.

There is one more mistake in Mr. Guthrie's statement, which we should be glad to set right before we have done. He speaks of the Dublin anatomists as "actually selecting the bodies of murderers, not only seeking them for dis-



section, but publishing, in the face of the whole country, the experiments performed on them." This "actual selection" is an unguarded expression. Those bodies are *accepted*, necessarily, and perhaps willingly, but they certainly cannot be said to be *selected*, or taken in preference to other subjects, for the purposes of public dissection; and that for a very obvious reason, inasmuch as no other bodies, save those of executed murderers, *can* be publicly dissected. And as to the publishing of the experiments on those occasions, this too can hardly be otherwise; it is done more through necessity than from recklessness. Public curiosity *must* be satisfied; the transaction is essentially public, and the publication of matters so intrinsically worthless and insignificant is evidently more in consequence of a duty imposed, than of a selection freely made.

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#### LICENSE AD PRACTICANDUM.

IN our last number, page 21, after remarking that the University of Dublin neither grants licenses to practice, nor recognises her graduates as practitioners, we added, "the same ordinance prevails at Oxford and Cambridge:" this was a mistake—a license *ad practicandum* is frequently granted in the former University after taking the degree of Bachelor in Physic; in the latter it may be obtained on going out in Arts, without becoming a Bachelor in Physic.

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#### COLLEGE OF PHYSICIANS,

Monday, April 5.

SIR H. HALFORD, PRESIDENT, IN THE CHAIR.

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#### On the Guaco.

DR. HAWKINS read a communication from Sir Robert Kerr Porter to the President on the subject of the *Guaco*. This is a parasitic plant, a native of South America, and possessing a high reputation in these regions as an anti-

dote to the bites of venomous serpents, the black scorpion, rabid dogs, &c. &c. The evidence adduced in support of these pretensions consisted of extracts from a memoir, published at Santa Fé de Bogota, by Senor Orbeis; and from a paper, by Mr. W. White, on the virtues of the guaco, and the mode of its application, dated Caracas, December 8, 1829. The former states, that when at Maraquito, in 1788, he heard mentioned the extraordinary powers of the native Indians in resisting the bites of snakes, in consequence of which they were called *Empericos*. Determined to judge for himself, he sent for one of these gifted persons, who brought with him one of the most deadly serpents of the country in a calabash. Having offered the Indian a handsome gratuity, he explained to him both the nature of his secret remedy—the guaco, and the mode of using it. He took the leaves and bruised them, extracting two large spoonfuls of the juice. "He then introduced some of the same fluid into three incisions he made between the fingers in each of my hands; also added the same kind of inoculation into my feet, and on the right and left sides of my breast." After this the Senor seized and handled the serpent, which indeed made no attempt to bite him.

Mr. White states the guaco to be efficacious in the bites of serpents, scorpions, and all other reptiles; in hydrophobia, rheumatism, contusions, amenorrhœa, diseases of the liver, external ulcers, tetanus, cramp of the stomach, consumption, and probably gout.

Specimens of the leaf and flower, as well as of the juice, were placed on the table, and it is probable that the plant may deserve a further inquiry into its merits, but at present nothing can be said with certainty, as its patrons, by attempting to prove too much, have thrown some degree of doubt over the accuracy of the whole narrative.

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#### TAPPING IN HYDROCEPHALUS.

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DR. CONQUEST introduced to his class, at St. Bartholomew's Hospital, on Saturday evening, one of the two children who have been successfully tapped by him for the relief of water in the

head. It having been previously intimated that the child would be brought forward, considerable interest was excited, and an unusual number of gentlemen were present. This child, a girl of about two years of age, had several signs of hydrocephalus from a date soon after its birth, and for many months past the head had gradually increased, until it acquired an enormous size. The forehead was singularly broad, and the anterior fontanelle unnaturally large. The pupils were permanently dilated; the child slept almost incessantly, and frequently had two or three frightful convulsions during the day and night. Dr. Conquest operated some time since, before a large number of the pupils of the hospital, by pushing a very beautifully constructed trocar into the right lateral ventricle. He introduced it obliquely, close to the edge of the right temporal bone, about midway between the crista galli process of the ethmoid bone and the anterior fontanelle, so as to avoid the longitudinal sinus on the one hand, and the corpus striatum on the other. The instrument entered about two inches below the scalp. An ounce and a half of bloody serum, mixed with portions of cerebrum, escaped. The pulse became feeble, and temporary collapse followed. The fluid was allowed to escape stillicidium, and within eight-and-forty hours about two pints and a half flowed out of the opening. Almost immediately after the operation, the pupils became sensible to the stimulus of light; the drowsiness was succeeded by disinclination to sleep, and the pulse, which had always before been remarkably slow, became about eighty-five. Two days after the operation, the brain evidenced signs of inflammation, with high constitutional disturbance; and great alarm was excited by a rather formidable attack of convulsions. Leeches to the temples, and the constant application of cold to the head, subdued the local inflammation, and within four-and-twenty hours all became tranquil. The head was well strapped, and from the cessation of cerebral excitement no unfavourable circumstance occurred.

When this interesting child was exhibited to the class on Saturday evening, every one was struck with the improvement of its appearance, and by the intelligence and cheerfulness of its countenance. Dr. C. stated that he con-

sidered it perfectly well, and as exhibiting a most gratifying and triumphant proof that this seemingly formidable proceeding might be safely and successfully adopted under similar circumstances.

The other case, to which the doctor has often adverted during the winter, he operated on last autumn, assisted by Dr. Hodgkin, the talented pathologist of Guy's Hospital. Nine ounces of serum were withdrawn from the posterior fontanelle. The head became lessened *six inches* in its circumference, and no increase in its size has yet recurred.

St. Bartholomew's, April 5, 1830.

## ROYAL INSTITUTION,

Friday, March 26, 1830.

SIR GIFFIN WILSON, F.R.S. IN THE CHAIR.

### *Life Contingencies, &c.*

MR. BROOKE, who this evening descanted "on the principles of the doctrine of life contingencies," did not appear to us to have developed any new principles, or to have rendered the practical application of those in familiar use either more perspicuous or more comprehensive. Hence we avoid giving an analysis of his observations, which were certainly more fitted for the closet than the lecture-room; and for the various accounts adduced of the respective health and longevity of the inhabitants of different towns, districts, and countries, the influence of political and moral causes, the effects of occupation, &c. &c. on health and life, we must refer to Dr. Hawkins' very valuable work on Medical Statistics, where the subject has been most ably treated. As an instance of the errors which the former modes of calculation involved, Mr. B. observed that an old computation stated that, in the year 1800, London would contain 5,800,000 inhabitants; whereas, by the census of 1801, it appears that the population, one year later, only amounted to 900,000—being a *trifling* mistake of upwards of four millions out of five.

In the library we observed some beautifully preserved Ceylonese birds, sent by Mr. Hume; various geological specimens, also from Ceylon, sent by

Dr. Davy; samples of stone coal; some curious specimens of iron delft ware; a cotemporary enamel miniature of Cowley, the poet, by Pettitot; and Goodwin's scheme for a national cemetery—a very picturesque plan, but, to our mind, a far less *grave* design than the projected London pyramid. Any thing, however, would be preferable to the present indecent system of interment in the streets of London: *e. g.* the churchyards in the Strand, the city cemeteries, *passim*; as well as that burying-ground, the name of which is a very mockery, St. Giles's in the *Fields*.

## EXTRACTS FROM JOURNALS,

### *Foreign and Domestic.*

#### OBSTINATE HYSTERIA CURED BY THE REMOVAL OF A SMALL TUMOR FROM UNDER THE BREAST.

A WOMAN had two small tumors, moveable under the skin, and about the size of small peas, which made their appearance after a blow on the chest. The development of one preceded that of the other, and was not attended with inconvenience. The appearance of the second was followed by symptoms of severe hysteria. She had been in this state for several years; when at length, urged by the severity of her sufferings, she applied at La Charité for relief. M. Boyer extirpated the tumor which had formed last, and thus at once put an end to the disease.—*Gazette Medicale*.

#### INTERMITTENT HEADACHE CURED BY THE EVACUATION OF CALCULI FROM THE NOSE.

A young woman had periodical headache, returning every day, and apparently originating in the left frontal sinus, and extending all over the corresponding side of the head. After many years suffering, she evacuated from the left nostril a calculus as large as a bean, which event was followed by improvement. She now tried sternutatories, by which means several more calculi were ejected, and afterwards some foetid pus. From this time she got well. The calculi were analysed, and found to consist of phosphate of lime, carbonates of lime, and magnesia; traces of soda,

oxide of iron, and animal matter.—*Ibid*.

#### SUSPENSION OF THE CEREBRAL FUNCTIONS FROM IRRITATION OF THE STOMACH.

Little more than a month has passed since I was requested to visit a gentleman said to be in a dying state. I found him apparently without sensation, his eyes open and turned up, his hands clenched, and his body alternately motionless and agitated by sudden and universal tremors, which caused the bed to shake beneath him. He was a stranger, and there was no one present who could give me a history of his case. In order to explore into its nature, I placed my hand upon his epigastrium; but scarcely had I touched the skin when he started up as though a bullet had been driven through him. Uncertain whether the coincidence might not be accidental, I repeated the experiment several times, and at each time the slightest pressure was sufficient to throw the whole frame into immediate and violent, though brief convulsions. Sufficient evidence was thus afforded of the seat of the disease, but not of the precise nature of the irritation. As his pulse was active, I bled him freely, and immediately afterwards applied a large sinapism over the region of his stomach. Consciousness was so far restored a few minutes after the bleeding, that, upon being asked in a loud voice if he felt sickness or pain in the stomach, he nodded in the affirmative. An injection of assafetida was now administered; and, under the united influence of this remedy and the mustard plaister, he revived to some knowledge of his situation, and was able to drink very freely of warm water, which I urged upon him. This soon produced the discharge of a considerable quantity of acid liquors from his stomach, and restored him for a time to complete consciousness. He now told me that he was subject to gout, of which he had recently had an attack in his foot, but had relieved himself by bathing the affected part with hot vinegar. The nature of the case was evident. While he was yet speaking, he was seized with a sudden spasm of the stomach, which threw him into his former state; and this alternation of consciousness and insensibility was repeated several times within the course of a few



minutes, each return of pain being so severe as at first to throw the whole nervous system into violent agitation, and then to overwhelm it for a time in complete torpor. I now applied sinapisms to the feet, and gave a mixture of laudanum and the aromatic spirits of ammonia; and, at the end of about four hours from the commencement of the attack, left my patient very greatly relieved. A dose of the compound tincture of rhubarb, with a proper regulation of the diet, was afterwards sufficient to complete the cure.—*Dr. Wood—in North Amer. Med. and Surg. Journal.*

PRESSURE ON THE DIAPHRAGMATIC  
AND PNEUMO-GASTRIC NERVES SIMULATING DISEASE OF THE HEART.

A female, aged sixty, had for many years experienced pain behind the sternum and at the lower part of the chest, which occurred in paroxysms. The pain was at first slight, but augmented in intensity, preserving however its intermittent character, and became soon accompanied with violent palpitations of the heart, difficulty of breathing, œdema of the upper extremities, a small pulse; and in a word, all the symptoms indicative of an obstruction to the circulation through the superior extremities. This patient remained for two years in La Pitié, during which time her chief complaint was of the pain behind the sternum, and at the lower part of the chest. For a long time she had no appetite; the emaciation was extreme, and she spoke in a whisper. At length she died.

On examining the body, it was discovered that the pneumo-gastric and left diaphragmatic nerves, as well as the aorta and its branches, and the veins of the superior extremities, were surrounded in different parts of their extent by masses of a schirrous nature, by which they were compressed, but not disorganized. The heart, which was of its ordinary dimensions, was of much deeper colour than ordinary; its tissues also appeared softened. The lungs were healthy, except that the right presented at its summit an excavation filled with blackish blood.—*Bibliothèque Médicale.*

OSSIFIED BRAIN.

M. C. Matteucci having examined a brain which he discovered in an old

anatomical collection, found it to exhibit a singular case of ossification throughout its whole substance. When heated, it burnt, evolving ammonia, leaving a bulky charcoal. When examined by chemical agents, carbonate of lime was found in small quantity, and phosphate of lime in much larger, but the principal part of the mass was animal substance, closely allied to *osmazome*.

The composition of the concretions that are sometimes found in the pineal gland, are, according to Fourcroy, of the same nature.—*Ann. de Chimie*, xlii. 335.

EFFICACY OF THE ESSENTIAL OIL OF  
LEMONS IN SOME DISEASES OF THE  
EYES.

M. Werlitz cuts a slice of lemon-peel, about an inch long and half an inch broad, places the upper part opposite the affected eye; and the eyelids being opened, squeezes out the little drops of volatile oil contained in the tissue of the rind into the eye. The sensation produced is acute, and continues for an hour or two. If the pain caused should be severe, cold applications are to be employed. The effects attributed to the oil of the lemon-peel are those of increasing the capillary circulation, and causing the absorption of morbid depositions.

From experiments which have been made at Berlin, it would appear that the following diseases are remedied by this treatment: 1. Inflammations of the eye which are passing into the chronic state, and which affect the external parts, as the conjunctiva, cornea, or sclerotic, particularly if the small vessels be turgid. M. Werlitz has also found the remedy useful in the rheumatic, gonorrhœal, and serofulous forms of ophthalmia; in pannus and pterygium; in albugo, and opacity of the cornea; and in cases where the texture of the cornea has lost its healthy density, and becomes soft and spongy. The remedy may be employed frequently during the day, depending upon the degree of irritation it produces.—*Journal für Chirurgie und Augenheilk.*

ANEURISM OF THE ARTERIA  
INNOMINATA,

*Involving the Subclavian and the root of the Carotid, successfully treated by tying the Carotid Artery.*

By VALENTINE MOTT, M.D.

Professor of Surgery, New York.

MOSES R. GARDNER, æt. 51, by profession a farmer, of sound constitution and good habits of life, applied to me some time in March for advice.

He gave the following relation of his case:—About three years ago, while occupied in removing a building, and compelled to lift heavy weights, he was attacked with pain in the upper and back part of the neck. This lasted until the month of January, when it extended to the right shoulder and arm, and continued until the following May; it then partially subsided, and he observed his voice was becoming hoarse, which he attributed to exposure and consequent cold. About eighteen months since, while shaving, he discovered a small swelling at the upper part of the breast bone, but did not remark any throbbing in it until some time afterwards. He had consulted a physician, but received no positive opinion on the case.

Upon examination, I found above the sternum a pulsating tumor, about the size of a pigeon's egg, spreading some distance under the clavicular and sternal portions of the right sterno-mastoid muscle, in the course of the subclavian artery, and extending as low down upon the pleura as the second rib, compressing more or less the bronchial tubes, and producing, on the least coughing or exercise, a wheezing, not unlike that of asthma. He shrunk from the least pressure upon it; complaining of impeded respiration, followed by pain. Its pulsations were synchronous with those of the heart, and decidedly aneurismal.

After fully explaining to him the nature of his disease, and its probable fatal termination should it increase and be left to itself, I advised him to return home; to avoid all exertion; to be occasionally bled, and to confine himself principally to a vegetable diet; but should he observe the least increase either of the tumor or any of his symp-

toms, to come again to me, and I would decide on the propriety of an operation.

I thought further delay unnecessary, and he being willing to abide by my judgment, after having stated to him the chances of the operation, I resolved on its performance. From the evident interruption in the circulation of the right arm, and the apparent effort of nature to effect a spontaneous cure, I determined upon tying the carotid first, to observe the result, and afterwards to secure the subclavian, should it be required.

On the 26th of September I operated. The artery was taken up in the usual manner; no material change was observed.

27th.—9 A. M. Slept well, and feels refreshed; thinks there is more room, as he expresses it, in breathing; complains of a little soreness of the tonsils in swallowing; pulse 58, regular, and tranquil; skin natural, pulsation and size of the tumor evidently diminished. 9 P. M. Much more restless from mental alarm; pulse 68, tense. In other respects the same as in the morning; being habituated to laudanum, was permitted to take a tea-spoonful.

28th.—9 A. M. Slept well after the opiate; breathes easily, and says he takes "a more satisfactory breath" than he did before the operation; feels much less of the pulsation in the tumor; pulse 63, not so tense; skin natural; cough much less. Ordered a dose of calcined magnesia and Epsom salts. 9 P. M. Has passed a comfortable day; his wife, who arrived from the country since the morning, expressed her surprise at the improvement in his voice and breathing, and the difference in the beating of the tumor. Pulse of the right radial artery very distinct, but intermitting once from ten to fifteen beats; in the left arm 80; coughs frequently, and expectorates freely; skin natural; tongue a little white; salts have not operated. Ordered the dose to be repeated, and if restless after its operation, to take his usual anodyne.

29th.—Saluted me this morning upon entering his room, with a full and fine voice, and said he was well enough to call on me; salts operated freely; thinks his cough and expectoration much less. I found him lying down and breathing quietly; pulse 71, and regular. The radial artery of the right arm beating as

last evening, with fewer intermissions, but of longer continuance; skin over the tumor more wrinkled; pulsation appears less, and feels weaker. Directed to continue his tea, toast, and gruel. 8 o'clock. As well as in the morning; takes a full breath without the least wheezing; pulsation in the right wrist very distinct and regular; in the left 62 to the minute. Continues the opiate.

30th.—Found him lying more recumbent than at any former period; pulse 70, and regular; right radial artery does not beat quite so firm as yesterday; wound discharging a little, was dressed.

October 2d.—Says he now feels as if he would get well; cough rather more troublesome; pulse 57; pulsation of the right radial the same; his bowels not being free, directed sub. mur. hydr. grs. viij.; sup. tart. potassæ, pulv. jalapæ, aa. ʒj. M. Evening:—Medicine has not operated; directed a dose of sulphate of magnesia. \* \*

16th.—Ligature separated and came away last night; the tumor above the sternum and pulsation entirely disappeared; cough and breathing better; voice nearly natural; pulse 66; now and then a very faint pulsation of the right radial artery; right hand a little swelled, and feels numb, and complains of the want of power to close it. \* \*

26th.—Left town this morning for his residence in New Jersey.

New York, Dec. 8, 1829,  
25, Park-Place\*.

## HOSPITAL REPORTS.

### LONDON HOSPITAL.

#### *Disease of the Heart after Rheumatism.*

[Case of Joseph Howard, continued from p. 735,  
Vol. V.]

MARCH 1st.—Is much worse this morning, but does not complain of pain; is troubled with sickness and vomiting, for which he has had the mist. effervesc. Dyspnœa increased. Bruit de soufflet and bruit de scie have of late been very distinct at the upper part of the chest. Pulse 120, and throbbing.

Perstet.

2d.—Says he feels better to-day. Respiration is more oppressed. Pulse 96, full and soft; less cough; feels his throat sore, but not his gums; lips rather purple; tongue

white; skin natural; one or two motions daily.

Perstet.

3d.—Feels much worse to-day; dyspnœa very great; pulse 120.

Perstet.

5th.—Dyspnœa increased; less cough.

To have Cerevisiæ Oss.

Perstet.

9th.—More tendency to orthopnœa.—Pulse 120; tongue dry; says that he has not strength to cough; mouth not sore.

Pulv. Digitalis, gr. i. o. n.

11th.—He died this forenoon.

*Post mortem Examination on the 12th.*—The body was much emaciated; the face of a leaden hue.

On percussing both sides of the chest previous to any examination, the right side was found to emit a much clearer sound than the left; and on exploring the chest, by introducing the perforator\* above the margin of the eighth rib of the left side, fluid escaped, in a sufficient quantity to point out the presence of hydro-thorax.

On opening the chest, the left side was found to be filled by a straw-coloured fluid, containing flakes of coagulable lymph. On removing the fluid, which was about five pints, a very thick layer of coagulable lymph covered the pleura costalis, and still more abundantly the pleura pulmonalis. A very small quantity was found on that portion of the membrane which is reflected on the upper surface of the diaphragm. The lung of this side, which extended nearly to the diaphragm, was compressed and confined to the side of the spine, and on being handled did not afford any crepitation; it had no appearance of organic disease. The lung on the right side was healthy.

On opening the pericardium it was found to contain about an ounce of limpid serum; and this membrane, on its internal surface, presented several thin and very delicate patches of effused lymph, but no adhesions.

The heart and lungs being removed from the body for a more minute examination, an aneurism was found to occupy the concave side of the arch of the aorta, formed by a dilatation of the outer coat of the vessel, and presenting a circular opening of two inches in diameter. The aneurismal tumor is about the size of an orange, and is filled by a firm coagulum; it extends more to the left than to the right side, compresses the

\* An instrument which has been invented by Dr. Davies, of the London Hospital; in shape, like a large needle, with a groove on one side; and which, on being made to penetrate the chest, allows the escape of a quantity of fluid, sufficient to indicate the existence of hydro-thorax.



left bronchial tube, so as scarcely to allow the passage of the handle of a small scalpel, and it also presses on the left pulmonary artery. On making an incision through the most prominent part of the tumor down to the coagulum, it appears that both the inner and middle coats of the vessel have given way.

The aorta is diseased and very much dilated between the aneurism and the heart; and under the internal coat of the thoracic portion (beyond the aneurism), which is rather contracted, there are numerous patches of a fibro-cartilaginous deposit. The bronchial tubes below the seat of the pressure are much dilated.

*Abdomen.*—A small quantity of serum was found in the abdomen. The liver was gorged with blood. The other viscera were healthy. The head was not examined.

REMARKS.—The case of Howard must be considered as one of no small interest, both on account of the numerous and perplexing train of symptoms, and from the appearances discovered on examination after death.

On the score of diagnosis alone, it is of the utmost importance to fix on such symptoms as may most readily lead to the detection of so insidious and so obscure an affection as an aneurism of the arch of the aorta; an affection which is not indicated with any degree of certainty, by any general or functional signs.

Corvisart put much confidence in the peculiar whizzing at the upper part of the sternum, perceptible by the hand—the dissimilarity of the pulse at the wrists—and the dull sound on percussion; but these are extremely equivocal, and he must have been aware that they could also exist with diseases of the heart alone.

Before the appearance of Laennec's publication, therefore, the difficulties in discovering the existence of an aneurism at the arch of the aorta, and which offers no tumor externally, were found to be almost insurmountable; and the incalculable benefit derived from the stethoscope, in other diseases of the chest, having been admitted, the expectations of medical men were raised high, and great assistance was looked for from the use of this instrument.

The author of Auscultation has brought forward one sign, which enabled him to detect about thirty cases of aneurism; yet,

being still impressed with the great difficulty of the subject, he offers it to the public with much diffidence, as we find by his thus expressing himself:—"Hitherto my experience has been insufficient to enable me to say how far the difficulty of a diagnosis is likely to be removed by the use of the stethoscope\*."

The sign (the justness of which he had two opportunities of verifying by dissection) is a pulsation of the aneurism perfectly isochronous with the pulse at the wrist, and in general louder and with greater impulse than the mere contraction of the ventricle. The importance of this sign was so strongly felt by Bertin, and which was verified by him in several instances, as will be seen in his work on the Diseases of the Heart and Arteries, that he stands boldly forward and advocates the use of the stethoscope, as affording the best means of detecting an aneurism of the aorta.

On the admission of the patient whose case we are now considering, an aneurism of the aorta was suspected from the impulsion, and from the bruit de soufflet, and sometimes the bruit de scie, heard at the upper part of the sternum; joined to the circumstance of the patient having attributed his illness to an effort in raising a weight. Little assistance could be afforded by the single pulsation just alluded to, as the dilatation of the artery between the aneurism and the heart gave rise to an indistinct whizzing and pulsation before the blood actually reached the aneurism. Can this single pulsation, then, be confidently relied on in all cases? It is to be feared not; for should an aneurismal tumor be so situated as to be in contact with either of the ventricles or the auricles in a state of hypertrophy, it is *à priori* to be presumed, that, independent of the pulsation of the tumor, an indistinct pulsation would be communicated to it by the contraction of the part with which it might be in juxta-position. Experience and careful observation must alone either refute or confirm the correctness of this sign afforded by the stethoscope; and admitting at present its value, the signs which may be principally relied on in diagnosing the presence of an aneurism of the arch of the

\* Forbes' Translation.

aorta, are, 1st, a simple pulsation at the upper part of the sternum, and most frequently a little to the right of the median line, isochronous with the pulse at the wrist; 2dly, an impulse at the same part, stronger than is perceptible at the region of the heart; 3dly, the bruit de soufflet, or the bruit de scie, in the same situations, immediately after the contraction of the left ventricle; 4thly, a whizzing or rushing at the top of the sternum, perceptible by the hand; 5thly, an obscure sound on percussion; and 6thly, the appearance of a pulsating tumor.

Thus all the local signs must be taken together, and are chiefly to be depended on. The general and functional signs which are usually present in cases of aneurism, are also equally marked in organic diseases of the heart and lungs, and are therefore of a very secondary importance.

The signs afforded by the percussion and auscultation of the chest are well deserving attention. The sound, on percuting the left side, was dull; on percuting the right, clear. The respiration was puerile on the right, and inaudible on the left; which indicated one of two conditions—either that the lung of the left side was in a state of hepatization, or that fluid existed in the cavity. The probability of the latter opinion was rendered still more likely by the increase of half an inch on the measurement of this side of the chest; such an increase never having been known to depend on the hepatization of the lung. At different periods, as was noticed in the reports, a very indistinct respiratory murmur was sometimes heard on the left side, close to the spine of the vertebra and down to the lower part of the chest. On the examination this was accounted for, by finding the lung compressed and adhering along the spine; this organ being in general, in cases of considerable effusion into the chest, forced more towards the upper part of the chest.

After several examinations, it was at last mentioned, in the report of the 27th Feb., that doubtful pectoriloquy was heard at the upper part of the left lung; and there was considerable difficulty in accounting for this sign. By Laennec it is pointed out as a pathognomonic sign of a tubercular excavation; but in the present case it was impos-

sible to admit that any such cavity did exist, as the patient had expectorated only a little mucus, and did not present the usual marked symptoms of phthisis. It was at last attributed to a dilatation of the bronchial tubes; although it was at the same time that the articulation of the voice up the tube was too distinct to come within the signification of the term bronchopony, as it is given to us by the celebrated writer on diseases of the chest. It will be seen, by referring to the post-mortem examination, that the principal bronchial divisions were much dilated, and also forced against the upper part of the chest, from the pressure of the fluid. Thus we have a cause, rare it is true, giving rise to pectoriloquy, and entirely independent of any tubercular excavation. There cannot be any doubt as to the existence of the sign, for the voice was heard to be distinctly articulated on traversing the cylinder, by several of the gentlemen attending the clinical practice of the hospital. Had the small instrument invented by Dr. Davies been used, the most certain demonstration of the presence of fluid in the chest would have been afforded, and the operation of paracentesis thoracis been proved feasible. But the attendant physician stated that there was too much evidence of organic disease to expect any ultimate benefit from the operation; besides that, the patient being so much debilitated as to be liable to syncope even on turning in bed, it is not improbable that the abstraction of the fluid (as has been observed in similar cases) would have given so great a shock to the system, and produced such an exhaustion of its powers, that death would have speedily followed. It may here be observed, that, with the excellent signs pointed out by Laennec, and the application of Dr. Davies' instrument, which may be used without the least risk of danger, effusions into the chest can be detected with the greatest certainty; and we may with confidence recommend this little instrument to the notice of medical men.

M.

#### ERRATUM.

In our last number, page 19, line 12, for "long lens," read "bony lens."

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# THE LONDON MEDICAL GAZETTE,

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SATURDAY, APRIL 17, 1830.

## LECTURES ON SURGERY,

Delivered at St. Bartholomew's Hospital,

By WILLIAM LAWRENCE, F.R.S.

— from 40

### LECTURE XXXI.

#### DISEASES OF THE CELLULAR SYSTEM.

*Phlegmon—Boil—Carbuncle—Anthrax—Anasarca—Edema—Phlegmasia dolens.*

THE cellular system, gentlemen, which we also call cellular membrane, or cellular substance, constitutes the frame-work of the body; it is the basis of all the organs, except perhaps the hair and the cuticle. Hence you may expect that the diseases of which this system is capable will be met with, more or less, in all the several parts into the composition of which it enters. It is probable that the cellular system is essentially the seat of inflammation, suppuration, serous and other kinds of effusion, and of those several organic changes which lead to the formation of tumors of different kinds.

Now, although the cellular system enters into the composition of all the organs, they do not all possess it in an equal quantity or bulk; therefore those changes—those morbid affections of which this tissue is susceptible—do not take place with equal frequency and facility in all parts of the body; and if there be any structure respecting which we entertain a doubt whether the cellular texture enter into its composition, we find it equally doubtful whether such part be liable to the diseases that I have just mentioned. Perhaps the cartilages are in this predicament.

The Latin word *phlegmon*, which is derived from the Greek term *φλεγω*, to burn, denotes an inflammatory swelling situated under the skin. In fact, *phlegmon* is an acute inflammation of the cellular and adipose cellular tissues, which very commonly ends in suppuration; and the abscess thus formed

is called *phlegmonous*. I have not any occasion to describe this affection now, because I selected it in order to exhibit to you the nature of inflammation generally. I spoke of the phenomena of inflammation, when in this state, as exhibiting a kind of type, from which a general notion of the inflammatory process might be derived. I shall therefore say nothing more respecting the nature and treatment of *phlegmon*, which, in its origin and essence, is simply inflammation of the cellular and adipose tissues. The cellular and adipose tissues may be inflamed so as to constitute a tumefaction, without the skin participating in the disease; that is, when the deeper parts of the system are the seat of inflammation. It is from the active form that the symptoms assume in this acute inflammation of the cellular tissue, that the term *phlegmon* has passed into common use, as equivalent to acute or active inflammation; although, originally, *phlegmonous* as an adjective, could only denote that kind of inflammation which is seated in the particular parts that I have mentioned.

In the case of *phlegmon*, we see inflammation attacking a certain circumscribed portion of the adipose and cellular tissues; it is limited to a larger or smaller extent. But the cellular tissue may be the seat of inflammation active in its nature, and yet not attended with that particular circumstance—viz. the boundary or limit which confines it to one spot. More particularly the stratum of cellular and adipose membrane which is seated under the skin, is liable to inflammation from a variety of causes; and the inflammation, when thus produced, is apt to extend in the cellular membrane (as it is continuous over the body), throughout the whole of the parts in which this texture is developed; it will spread readily through the whole extent of a limb, and reach to the trunk. This is *diffused inflammation* of the cellular structure. It is seated in the same tissue as *phlegmon*; but, instead of being limited to one spot, it wants the circum-



scribing boundary, and it extends in circumference. Now this affection is generally combined with inflammation of the skin covering the affected cellular membrane. I shall therefore defer the observations that I have to make on this part of the affection till I speak of erysipelas, when I shall mention it to you under the head of phlegmonous erysipelas.

#### *Boil and Carbuncle.*

The cellular membrane is the seat of other inflammations (and of two in particular), in which the inflammatory process is characterized by induration and the formation of partial sloughs. These two inflammations are *boil* and *carbuncle*; which only differ from each other in magnitude—that is, in the quantity of the cellular system which they occupy. The subcutaneous stratum of adipose substance sends numerous small processes, accompanying the blood-vessels and nerves, into the skin. The blood vessels and nerves that belong to the skin, ramify in the cellular and adipose tissues, and then their branches ascend and pass into the skin itself—those that pass into the skin being accompanied with prolongations of adipose substance; so that, if these textures were dissected minutely, you would find that the skin would appear perforated by an infinity of small openings, which these prolongations of adipose tissue enter. Boil consists in inflammation of one such part of the subcutaneous or adipose tissue. There is a firm but small swelling, of a painful kind, and the skin covering the part assumes a red colour, and presents a pointed projection. The part feels very firm and hard, when you examine it externally, and the inflammatory process embracing the skin, which is a part full of nerves, is attended with very considerable pain; and as this inflammation is seated quite on the surface of the body where the part is liable to be struck or injured, or rubbed, people often experience considerable uneasiness from it. The painful nature of boil is well known, and it has passed into a popular expression—"as sore as a boil." The inflammation does not proceed very rapidly; it will last some days; till at length, on the most prominent point of the elevation, you observe a small yellow pustule formed. The cuticle breaks, and a discharge of a little thick matter takes place; the quantity discharged is not sufficient to produce a subsidence of the swelling, nor very materially to diminish it. This opening enlarges, the discharge becomes more considerable, and you see that a yellow or dirty whitish-looking substance is seated in the aperture. This is the slough of the small portion of the adipose substance which is the seat of the disease. In the course of two or three days, the supuration will have sufficiently detached this

small slough, which then makes its way out through the opening. You see a portion, perhaps the size of a pea, come out. It is a softish loose substance, well soaked with matter. This is what common people call the *core*; and the vulgar, who observe pretty accurately what passes before their eyes, know that the boil will not heal till the core has come out—that is, till this slough of the cellular membrane is separated—and then it will heal very readily. This inflammation very commonly arises from some external irritation of the skin: in persons who have a very tender skin, rubbing or friction, or other external irritation, may produce it. Sometimes a succession of boils forms on the skin after it has been irritated by a blister; more particularly if the blistered surface has been dressed with an irritating application. Or you may have boils formed from some internal cause; and, in fact, there must be some internal cause connected with these occurrences, as it does not often happen that a person has a single boil—one and no more; on the contrary, there is generally a succession; as soon as one is well, another is produced; and thus a person may be plagued with them for several weeks, or even months.

The *treatment* of this affection is simple; in fact we cannot materially control its progress. We are sometimes directed to apply poultices; but people will not usually take the trouble of putting on a poultice for an affection of this kind. The old women say, you should put on a *drawing* plaister, to bring it to a head; and I do not know whether, in this instance, their surgery is not the best; at all events it is the most convenient. You may put on a common adhesive or an ammoniacum plaister, and let it remain till the inflammation has advanced sufficiently to separate the slough; when you take it off the slough comes away with it, and then a common dressing is sufficient to complete the cure. If the boil be large, and give the patient much trouble, a poultice may be applied; and if a succession of them take place, you find it necessary to pay some attention to the person's health—to see that the digestive functions are properly performed.

*Carbuncle*, as I have already mentioned to you, is essentially the same affection as boil, only differing in magnitude and situation. Carbuncle forms on the trunk of the body, seldom if ever on the extremities, and in a great majority of instances it is found on the posterior surface of the trunk, on the back, the neck and the shoulders (or the interval between them), or on the loins. Sometimes it attacks those parts of the skin where the texture of the integument is the thickest. A very common seat of it is just below the region of the occiput, at the upper part of the neck. I believe we cannot say

that carbuncle will *never* take place on the extremities; in fact, a large boil may be said to be a small carbuncle, and a small carbuncle may be considered as a large boil. It is a question of magnitude. We cannot say that the boil shall confine itself simply to one minute aperture of the kind that I have mentioned, though commonly it does so; in fact, you may have a large part of the cellular membrane involved in the boil; it is, as I have just said, a question of size. We cannot say exactly that a carbuncle is one large boil, but rather that it is an aggregation of boils. It embraces a considerable part of the subcutaneous cellular, and adipose tissues; and therefore includes within its action a great number of those cutaneous prolongations. It is not that the slough is one large one, but a carbuncle consists of a great aggregation of these minute sloughs. A carbuncle begins by perhaps a small pimple, or a little hardness under the skin; it begins in a way from which the patient cannot at all anticipate the serious disease that is to follow. Perhaps he has a little pimple just at the upper and back part of the neck, which feels a little sore, but he does not think much of it for two or three days. In the course of a few days more, however, it will have extended to the surrounding parts, so as to have acquired the size of half an orange, or of the palm of the hand; and if the progress of the affection be not limited, it will soon go much beyond these dimensions. You may have an inflammation on the back, perhaps the size of a large dinner-plate. When it has acquired about the size I have mentioned—that of the palm of the hand—you will find that it consists of an inflamed induration of the adipose and cellular tissue, and an inflammation of the skin covering them. The skin is of a very bright red, generally rough and irregular on the surface, and the subcutaneous tissues are the seat of distention, with induration and irregularity of surface; and under this you feel a hard, solid kind of mass, of uncertain depth—a kind of hard cake of inflamed cellular membrane, which, in circumference, extends considerably beyond the limits of the reddened or inflamed part of the skin. After the lapse of perhaps seven or eight days, the inflamed part of the skin becomes of a very vivid red, and there forms upon the surface of it a number of those minute yellow spots, or pustules, which I described as occurring in the case of boils; and these are in their nature exactly similar. A thick matter escapes from them, which, in the first instance, comes out in small quantities, but which, after the lapse of a little time, exudes much more freely; and particularly if you press upon the part, you find a considerable quantity of matter will issue out of a great number of small roundish openings, in the

inflamed part of the skin covering the carbuncle.

Now you will easily conclude, that if the inflammation of a single part of the adipose tissue under the skin, which occurs in a boil, can be so excessively painful as to become proverbial, the increased inflammation occupying so large a part as that which occurs in carbuncle, will be attended with pain of the severest kind. There is a burning pain, a sense of tension or confinement, rendering it extremely painful to the patient to move that part of the body in which the carbuncle is situated: if it be on the occiput, for instance, it is impossible to move the head or neck. This pain is constant, lasting night and day, and totally preventing the patient from getting rest. It is attended with a violent sense of throbbing and pulsation throughout the whole of the mass; and this painful throbbing is by no means confined to the seat of inflammation, but shoots and extends into the surrounding parts. A local inflammation of this very active and considerable kind, will of course be expected to produce sympathetic disturbance of various parts of the economy. It particularly deranges the functions of the digestive organs; it also disturbs sympathetically the circulating and nervous systems; and thus to the local suffering is added that of serious constitutional disturbance of a febrile character;—and in these cases, between the two, the patient is not only in a state of great suffering and pain, but very frequently he gets into a condition of great danger.

Now if we cut through the carbuncle at the period of time that I have just mentioned, we shall find that there is a very large and thick mass of indurated cellular texture under the skin, which has acquired a considerable degree of hardness; it resists the knife in cutting through it as if you were dividing a portion of brawn. There must, of course, be considerable effusion into the interstices of the cellular and adipose membrane, to produce this brawny hardness. It is a solid and firm effusion, an effusion which has the effect of condensing,—not merely of thickening the part, but of hardening it. Throughout the whole of this dense and brawny texture, there are minute particles of matter disseminated; not a deposition of matter in one cavity, like an abscess, but numerous, and very often small, suppurations, the largest of which will not exceed the size of a pea, and the great majority of which are less. Now when you find matter thus deposited in so many parts in the centre of a hard, tough, unyielding morbid growth, you will easily account for that peculiar sense of tension and confinement which characterizes a carbuncle.

Frequently, in making sections of the diseased mass, you observe parts of the cellular

membrane that have undergone that change which is the precursor of mortification. These have assumed a peculiar yellow appearance. The cellular membrane before it loses its vitality, turns of a dirty yellow colour, and the parts that exhibit that appearance are sure to slough. The minute apertures in the skin through which the matter escapes in carbuncle, increase in size; frequently it happens that the cellular membrane immediately under the skin sloughs extensively, and that the skin covering the sloughing part undergoes the same process, and perishes also. Thus you have a large mortification formed in the interior of the carbuncular inflammation, and this occurrence, which perhaps at the first view to a person who witnessed the progress of an affection of this kind, and was not conversant with its nature, might appear an unfavourable circumstance in the complaint, is the most favourable turn the affection can take. When sloughing thus takes place in the centre of the mass, the detachment of the slough affords an exit for the matter, and will stop the extension of the inflammation in the circumference. The slough which is thus formed is a dirty, loose, ragged, whitish or yellow substance, which comes away soaked with a thick yellow matter. When it separates, a free issue is given to the minute suppurations which are disseminated through the carbuncular inflammation, a clean, granulating surface is produced, and then the parts heal by the natural process of granulation and cicatrization, while the induration and redness subside in the circumference. The sympathetic disturbances which were produced in the economy, are quieted in proportion as the local causes of these disturbances are removed, and the case does well. It often happens, however, instead of taking on this active form, and producing this extensive mortification, that there is a very insufficient discharge of matter through the openings in the skin; in fact, they merely give issue to the suppurations that are seated near the skin, while the deeper seated collections of matter which are dispersed throughout the whole inflamed mass of cellular membrane, are not relieved at all by these openings;—then the inflammation, the induration, and suppuration, which constitute the essence of carbuncle, remain in the circumference, and the disease continues to extend, getting larger and larger, till it attains the size of a plate, or extends as far as the dimensions of the part will allow it. The constitutional disturbance augments at the same time, and you will not be surprised that the powers of the patient give way under such an extension of this formidable disease, and that in fact carbuncle from these circumstances is very often fatal.

I think that the situation I mentioned,

immediately behind the occiput at the upper part of the neck, is perhaps the most dangerous one for a carbuncle to occupy. The head generally participates very seriously in the inflammatory disturbance which takes place when a carbuncle is in that situation, and thus it has happened to me to see several instances of carbuncle thus seated terminate fatally, in spite of all the efforts that could be employed. When it is seated on the shoulder, back, or loins, we generally succeed in checking the progress of the affection.

The causes of carbuncle are essentially similar to those of boil. It very commonly arises as the immediate result of external irritation; blisters, issues, setons, tartar-emetic ointment, plaister of any kind, or any other considerable irritation of the skin, may lead in persons of particular constitutions, and under a certain state of health at the time, to the occurrence of this carbuncular inflammation. Not long ago I saw a gentleman who had a large carbuncle at the nape of the neck, in consequence of having had an irritating plaister applied there. He had consulted a medical person for a pain in the head, who prescribed different remedies for him; among these was a plaister to the neck, to which was added some tartar-emetic powder. He was directed to keep it on for a certain time, and as he was in the habit of following the instructions of his medical attendant, he kept it on, although it gave him great pain. When he came to me, I found that he had got a large carbuncle on the back of the head and neck: he got well of that, but he had another form over one of the scapulæ—this was also cured. It is well for you to be aware of these occurrences, because in elderly persons, and in those of impaired constitutions, you should be cautious how you apply irritants of this kind to the skin, and allow them to remain for a considerable length of time. We must not, however, consider in these cases that carbuncular inflammation arises simply from irritation applied to the skin; we must also take into view the state of the constitution of the individual in whom the occurrence takes place. Now the patient whose case I have just mentioned was a young man, not more than forty-five, but he had been in the habit of living freely, and drinking a good deal of wine, which had done his constitution little good; but otherwise he was not much out of health.

Carbuncle commonly takes place in free livers, particularly those who have been addicted to drinking, and have more or less impaired their constitution by such habits of indulgence; it chiefly occurs in those persons after the middle life, when the effects of such habits are more serious on the health and constitution; in such individuals it frequently comes on after they have been labouring for some time under impaired health. We find when carbuncle has taken place, that



the person recurring to the state of his health, says he has been unwell for some weeks or months—that he has had headache, and been thirsty—that his bowels have been confined—and that his appetite has not been so good as usual.

Now you might naturally expect that local means, particularly the loss of blood, might lead to the resolution of the carbuncular swelling, or might tend to prevent its increase. It is, however, a kind of inflammation which does not admit of being materially checked by measures of this kind. I would not venture to say that the application of leeches for the instant may not have some effect in diminishing the swelling and checking its progress; but I cannot say that I ever saw an instance in which it produced resolution of the tumor when once the carbuncular character was fully established. I cannot, therefore, recommend this course of proceeding with any confidence as to its power in preventing the occurrence of the disease, or, in fact, in hindering it from proceeding to its full development. There is, however, a mode of local treatment which is fully effectual in relieving the patient at the moment, and preventing the further progress of the disease, at least in a great number of cases. This consists in making a free incision through the whole of the inflamed cellular texture and skin covering it; which incision produces a considerable discharge of blood from the parts, and thus no doubt you relieve the local inflammation—you set at liberty the parts which had been in a state of inflammatory tension, and thus you give immediate ease to the patient. After the performance of this incision, which by the way is very painful, from the parts being in such a sensible state, the patient generally feels easy, and you relieve a condition of the greatest suffering. This incision has the further effect of giving a free issue to a great number of the suppurations that are disseminated throughout the carbuncular mass. Thus it tends to circumscribe the disease, and to prevent the inflammation from extending in circumference. General experience has so fully established the benefits of this plan of treatment, both with respect to its influence in relieving the sufferings under which the patient labours, and in preventing the extension of the disease, that it is now considered an universally admitted practice; and a person might be regarded as extremely ignorant if he omitted to adopt this treatment to its fullest extent in carbuncle. Now you must proceed boldly in this incision; for if you only make a small opening to let out the matter, as you would under ordinary circumstances, you might as well do nothing at all. You must cut through the whole length and the whole depth of the inflamed part; and in doing this, you will sometimes have to make

your incision from two to three inches in depth. You must go so completely through it as to cut quite to the base of the cake in the cellular membrane, otherwise you do not accomplish the purpose. If it should require an incision three or four inches deep, it is of no consequence; you must make it; in fact there is no risk of injuring any vessels of consequence, for you do not go deeper than the cellular membrane. In truth, the cellular membrane, in consequence of the induration and swelling, is much augmented and thickened; so that you go no further than the depth of the adipose and cellular tissues; you do not divide any vessels that are beyond the stratum of fat and cellular substance. It is true that sometimes very free bleeding will take place from these incisions; and, in consequence of the indurated state of the substance which surrounds the bleeding vessels, they do not retract—so—that you cannot so completely rely on the spontaneous termination of hæmorrhage, as in other circumstances. It is necessary, therefore, to bear this circumstance in mind, and not to leave the patient, after an incision has been made into a carbuncle, until you are satisfied that no hæmorrhage of a serious kind can take place. I remember attending a gentleman who had a carbuncle—an elderly man, about 60. He had a carbuncle on the back of one of his shoulders, which I treated by incision, and he got well. He then had a carbuncle at the back of the other shoulder—a larger one—and he did not like to go through this discipline a second time; however he had no choice, the incision was made, and this also got well. I took my leave of him one day, considering he was perfectly well, and I did not mean to see him again. I think it was next day, or next but one, that I was sent for again; he said he had got a swelling under the arm, and upon examination I found a considerable swelling in the axilla. I thought I felt fluctuation, and feared that matter had formed. I was puzzled to conceive how there should be a collection of matter in this gentleman's axilla so soon: only the day before, or at most forty-eight hours, he was not affected, or he had concealed the existence of the complaint. However I was so satisfied that there was matter, that, although the parts were not very hard, I suspected there might be a carbuncle, and I made a deep incision and let out a large quantity of matter, with which also there came out a very considerable slough of the cellular membrane. The parts over this were thickened and tough, and there was a considerable depth divided. After the matter had come out, there was a pretty free bleeding; and upon looking at it, it appeared to me that it was arterial blood. However, I brought the edges of the incision together, and confined them by sticking-plaster; the blood then ceased to flow, and I

fancied I had managed it very cleverly. I left the patient, and went out to dinner. I dined at a tavern that day; and in the middle of dinner, a young man came in great haste and said his father was dying—that, in fact, it was of no use for me to go, for he would be dead before I could arrive. I did go, however, forthwith; it was some distance—in fact at Pentonville; and when I got there, I found he was considerably reduced by bleeding, and had fainted, which had excited the alarm and idea that he was dying. On examining the axilla, I found that there was free arterial hæmorrhage from the part; but at the same time it was so deep, that I could not satisfactorily find out the bleeding vessel. I tried, in this case, a mode of stopping hæmorrhage which has been confidently recommended as capable of arresting it in all cases where the artery divided is not of large size—namely, a saturated solution of alum. I dipped some lint into this, and confined it in that situation, but it had no effect whatever, and the bleeding went on; at last I was obliged to stop it by getting a large curved needle and ligature, passing them through the skin above where I had made the opening, carrying them through the whole thickness of the tumor, and bringing them out again lower down. I tied a large mass together, and in this way stopped the hæmorrhage.

In the case of a moderate-sized carbuncle—say the size of half an orange—you should cut it straight across, and then longitudinally, so as to divide it into four quarters, and that will give a sufficient issue to the matter and sloughs; only mind, let me again tell you, that you must go deep—through the whole depth of the inflamed substance. You must begin beyond the limit of the inflammation at the commencement of the incision, and go beyond it at the termination, so as to insure that you have included the whole; you will thereby prevent further mischief. But when the carbuncle is large—for instance, when it extends from ear to ear—the crucial incision is not sufficient. You may make the incision the whole length, but then you must make three or four, or more, longitudinal cuts; or you may make a kind of stellated incision, the various cuts meeting in the centre, only take care that you have divided to a sufficient extent the indurated and inflamed mass, so as to give as free an issue as you can to the numerous suppurations that are disseminated through it. After you have done this, you may apply a linseed poultice to the part for one dressing, and then, as your object is to excite and bring on free suppuration, you should dress the incisions you have made with the yellow basilicon ointment, spread thick upon lint—have it spread thick the whole length, and lay it into each of the incisions the whole depth;

then cover it over with a linseed poultice. This excites suppuration, tends to bring the complaint to a crisis, and to prevent it from extending in circumference. This is the essential part of the local treatment of carbuncle; but with this you find it necessary to combine some general means—usually a moderate antiphlogistic treatment is proper: active purgatives in the first instance, then occasionally a repetition of milder ones, with perhaps saline medicines, sudorifics, and low diet. You pursue these means till the local and general excitements are lessened or removed. You may find, particularly in elderly persons, in whom carbuncle chiefly occurs, that a state of feebleness or debility will come on before the local complaint is healed; you find the patient, perhaps, after a time, in consequence of these occurrences, with a weak pulse, and other symptoms of depression. Under such circumstances, you must administer tonics, particularly bark, and give a good diet, with wine. I beg, however, to caution you against the idea frequently entertained of its being necessary to employ these means—that is, tonics, wine, and full diet, in the treatment of carbuncle *generally*—because this comes on in persons accustomed to free living, because the patients have been in the habit of taking a pint or a bottle of wine a day, and because the local mischief frequently ends in mortification. From these circumstances the idea has arisen that debility constitutes the essence of the complaint, and therefore that the general treatment should consist in tonics and a stimulating plan. This is a very mistaken notion, and in cases of this disease where you employ tonic medicines, wine, and full diet, at the latter period of the complaint, it is necessary, as in all other instances, that you should watch their effects, and take care that the patient does not carry them too far, nor continue them beyond the necessities of the case.

I attended a gentleman with a carbuncle lately. It was seated on the outside of the neck, just beneath the occiput; it was what we might call a carbuncle of moderate size. It had been partially opened before I saw it, but not so as to give effectual relief. I just made a crucial incision through it, and it was attended with immediate relief of all the symptoms, and the patient went on very favourably. Now this gentleman was fond of his wine—indeed he took from a pint to a bottle a day, using but little exercise. He was, therefore, very anxious to get to his wine and porter; in fact, persons are haunted with the fear of weakness and being too much debilitated, and they pester medical men to allow them to take something to support them. This gentleman had a good appetite, and could have relished his wine; and really sometimes one is prevailed upon to comply with such requests, though it be

against his better sense: patients are so importunate, that one allows them to have what they want. One day I told him that he might take three or four glasses of wine, knowing that he had been in the habit of taking a great deal. I did not see him some days, for he was going on very well, and I left him to his usual attendant. I do not know whether he confined himself to that allowance of wine, but he went to business and caught cold: he had a violent relapse of inflammation—a severe attack of erysipelas, beginning in the neighbourhood of the carbuncle; and, in fact, he was confined a fortnight in consequence of this. He was more severely ill than before, and it was found necessary to bleed him; the blood was strongly buffed and cupped. I believe if he had not taken the wine I allowed him, that he would have gone on uninterruptedly towards a state of health.

I have spoken of this affection under the name carbuncle; but you will often find it described under that of *anthrax*, which is a Greek word, signifying *burning coal*; and the word carbuncle, which we have employed, also signifies a precious stone—a variety of ruby. It seems strange that two such names should be applied to this disease. Those that have employed the word carbuncle, have sometimes divided the affection into what they call a mild or innocent carbuncle, and a malignant carbuncle. Under the head of malignant carbuncle, which by some has been described by the term *anthrax*, they place affections of a sloughing nature—that is, a local inflammation going into a slough, as occurs in the plague, and some other bad fevers. Respecting this malignant carbuncle or *anthrax*, I have nothing to say, because I never saw it; but in ordinary practice, I know only of that kind of carbuncle that I have described to you, and which comes under the head of the innocent or mild carbuncle of those who divide the disease into two species. There are instances of local inflammations going into sloughing, one of which I mentioned under the name of malignant pustule, and which is produced by the direct application of deleterious substances to the skin.

#### *Anasarca—Edema—Phlegmasia Dolens.*

The cellular membrane often is the seat of effusion, either of serous fluid, or of something of a firmer consistence, which produces swelling of the part in which it is found—a swelling which, in the case of serous effusion, is soft and inelastic, so that when you make pressure upon the part, it retains the indentation of the finger—in technical language, *pits* on pressure; but in cases of firmer effusion it is an elastic swelling, which does not retain the impression—does not pit on pressure. When effusion

takes place in the cellular membrane of the body generally, it constitutes *anasarca*, or general dropsy. When it takes place in a certain part, and is confined to a particular portion of the body, it is termed *edema*. *Edema* is a Greek word; it simply means *swelling*—nothing else.

*Anasarca*, or general dropsy, usually begins in the lower extremities, and gradually extends from them over the rest of the body; but we see this taking place under very opposite states of the system. There is an anasarcaous effusion connected with an excited state of the circulation, essentially, therefore, of an inflammatory nature. We find a general effusion into the cellular membrane, occasionally accompanied with a full and strong pulse, and with a defective performance of the various excretions, particularly those of the alimentary canal, of the kidneys, and of the skin;—it is, in fact, a state of inflammatory action of the vascular system, in which the excretories which open into the cells of the cellular texture are the seat of disease, instead of any particular organs being affected. Under such circumstances we find it necessary to take blood, to purge the patient, and to employ the antiphlogistic treatment generally; to put the patient on low diet; and after having adopted these means, we often find it advantageous to try the use of mercury, with squill or digitalis, and of nitre and supertartrate of potash, to restore the excretions. In this way we get rid of the anasarcaous effusion, when it is of an active kind. *Anasarca*, or general dropsy, however, more frequently is seen in connexion with those serious organic affections of the viscera, of the chest, or abdomen, which fall under the care of the physician. Here there is a state of weakness as the cause of the anasarcaous effusion; in fact, in surgery we have little to do with such cases. Occasionally, however, we are called to perform a little operation, in order to remedy the effects of the distention of the cellular membrane. The lower extremities sometimes are so loaded with a serous effusion, that the skin is put on the stretch, and seems as though it would burst, and the patient experiences much distress from this circumstance: the penis and the scrotum become the seat of enormous swellings, which sometimes impede the evacuation of the bladder. Here it is necessary to make a puncture, to let the fluid drain off, and partial relief is thus afforded. All that it is necessary to observe respecting this subject is, that it is sufficient to make a single puncture in a limb or part, such as the scrotum or penis, and through that single aperture, if it be in a dependent situation, the whole of the fluid will drain off;—a single puncture, not broader than the blade of the lancet, suffices for this purpose. Sometimes people talk of making scarifica-



tions in anasaruous limbs, and accordingly they proceed to make several cuts, and these of some length. This is unnecessary, because the cells of the cellular membrane communicate so freely, that the fluid will all drain off through one aperture; and when these long cuts are made, it not unfrequently happens that mortification ensues, as we also see take place from another practice—an extraordinary one—that of putting blisters on anasaruous limbs, to draw the water off. I have many times seen mortification arise from that circumstance.

*Edema*, like anasarca, may either be active—that is, inflammatory, or passive—that is, from weakness, or you may have various intermediate degrees between these. In active *edema* there is generally, or at least frequently, some degree of redness of the integuments, and some sense of heat communicated to the hand; indeed, the patient is aware that the part is hotter than natural. There is a curious kind of swelling which comes under this head—it generally makes its appearance within a short period after parturition, and is called *phlegmasia dolens*. It is an *œdematous* tumefaction of the lower extremity of one side, to account for which has greatly puzzled practical persons and pathologists; but of late years some successful attempts have been made to investigate the nature of this affection. Dr. Davis found in one case, that there was a state of inflammation in the large venous trunks of the limb—that the external iliac and femoral veins were inflamed, and that to a considerable extent. This has led to an examination of limbs affected with this disease, and similar appearances have been found in a variety of instances; and in many cases where tumefaction of the limb has gone to a serious extent, it has been found that inflammation in the principal venous trunks of the limb had existed, and there could be no doubt that the swelling arose from that cause. Dr. Robert Lee has lately shewn how it happens that the veins of the limbs become inflamed after parturition. He has shewn the inflammation of the external iliac and femoral veins to be the consequence of a change which takes place in the uterus, in consequence of the unfavourable state in which that organ and its appendages are placed at the period of parturition. Thus the veins of the uterus become first inflamed, and the inflammation thence extends to the iliac, and then to the femoral vein. This view of the pathology of the affection has led to the proper mode of treating it, which consists in the application of leeches over the tract of the inflamed vessels, and in the repetition of that measure, with other suitable anti-phlogistic means. It is, however, necessary for you, whether in cases of *phlegmasia dolens* or in cellular *œdema* occurring under other

circumstances, to direct a careful examination to the principal venous trunks of the swelled part—make gentle pressure over them, and if you find by the existence of tenderness that you have reason to suppose inflammation exists, you will be led to the proper mode of treatment by what I have above said.

Some time ago I removed the thigh of a patient in this hospital, in consequence of a compound fracture, and I fancy a vein was tied after the amputation, without our knowing what had occurred; however, the stump went on well, and healed, no particular swelling or symptoms of inflammation taking place in it. But what was very singular, the veins inflamed in the opposite limb, and an *œdematous* swelling of an active kind—a tumefaction of rather a firm nature, with redness, heat, and pain of the sound thigh and leg occurred. On following the course of the femoral vein with the fingers, considerable pain was experienced by the patient; and on tracing the saphena, a hard cord-like sensation was communicated, which, with the other symptoms, left no doubt that inflammation had taken place, both in the femoral and some of the larger veins of the limb. The case did well under the treatment I have mentioned—the application of leeches, antiphlogistic means, with diuretic medicines, particularly mercury, squills, and digitalis.

*Edema* sometimes occurs not perhaps from the direct inflammatory state of the limb, nor any thing we can call weakness, but in consequence of pressure on the venous or absorbent trunks. The pressure of a tight bandage will produce an *œdematous* swelling of the limb below it: general disease of the absorbent glands of the limb, such as the affection of the glands in the axilla in cancer, produces *œdema* of the upper extremity. The pressure of an aneurismal tumor; the pressure of the pregnant uterus on the absorbents and veins of the lower extremities; these are causes producing *œdema* of the limbs, and in fact, *œdema* thus produced cannot be remedied by any direct treatment; it can only be removed when the cause ceases; and in some of the cases that I have just mentioned, we cannot put a stop to the cause at all.

Where a serious injury has been sustained by a limb, such as a bad compound fracture, or a violent bruise, by which the patient has been long confined, and constantly at rest, when he begins to use the limb again, and to put it into a depending position, it is not uncommon for *œdematous* swelling to take place. Under such circumstances the swelling may be diminished, if not removed, by local friction; either by simply dry rubbing, or friction with a simple liniment, and by local pressure to the part through the medium of plaisters, or a bandage applied to it. These means will be sufficient to get rid of

that kind of œdematous swelling which in these cases may be considered as the result of debility. I would only observe in conclusion respecting this point, that we are not to regard the word œdema as indicating the nature of the swelling to which the name may be applied—not to understand that in every case there is a condition of debility producing that serous effusion in the limb which constitutes œdema. Thus you find in many cases that the state of the limb is one of active inflammation, and only in a small number of cases comparatively is it to be considered as a condition of debility.

to 97.

## OBSERVATIONS ON OPIUM AND ITS TESTS.

By ANDREW URE, M.D. F.R.S. &c.

FEW subjects of chemical research are more interesting to medical science than the constitution of opium. The poppy, like every other vegetable, must vary in the quality of its secreted juices, with soil, climate, and season; whence corresponding changes will ensue in the nature of the inspissated product. Did the anodyne and soporific virtue of this medicine reside in one definite principle, chemical analysis might furnish a certain criterion of its powers. It has been pretty generally supposed that this desideratum is supplied by Sertürner's discovery of morphia. Of this narcotic alkali not more than seven parts can be extracted, by the most rigid analysis, from one hundred of the best Turkey opium; a quantity, indeed, somewhat above the average result of many skillful chemists. Were morphia the real medicinal essence of the poppy, it should display, when administered in its active saline state of acetate, an operation on the living system commensurate in energy with the fourteen-fold concentration which the opium has undergone. But so far as may be judged from the most authentic recent trials, morphia in the acetate seems to be little, if any, stronger as a narcotic than the heterogeneous drug from which it has been eliminated. Mr. John Murray's experiments\* would, in fact, prove it to be greatly weaker; for he gave two drachms of superacetate of morphia to a cat, with-

out causing any poisonous disorder. This is perhaps an extreme case, and may seem to indicate either some defect in the preparation, or an uncommon tenacity of life in the animal. To the same effect Lassaigne found that a dog lived twelve hours after thirty-six grains of acetate of morphia, in watery solution, had been injected into its jugular vein. The morphia meanwhile was entirely decomposed by the vital forces, for none of it could be detected in the blood drawn from the animal at the end of that period\*. Now, from the effects produced by five grains of watery extract of opium, injected by Orfila into the veins of a dog, we may conclude that a quantity of it, equivalent to the above dose of the acetate of morphia, would have proved speedily fatal.

Neither can we ascribe the energy of opium to the white crystalline substance called *narcotine*, extracted from it by the solvent agency of sulphuric ether; for Orfila assures us that these crystals may be swallowed in various forms by man, even to the amount of two drachms in the course of twelve hours, with impunity; and that a drachm of it, dissolved in muriatic or nitric acid, may be administered in the food of a dog without producing any inconvenience to the animal. It appears, however, on the same authority, that thirty grains of it, dissolved in acetic or sulphuric acid, caused dogs that had swallowed the dose to die under convulsions in the space of twenty-four hours, while the head was thrown backwards on the spine. Oil seems to be the most potent menstruum of narcotine; for three grains dissolved in oil readily kill a dog, whether the dose be introduced into the stomach or into the jugular vein.

Since a bland oil thus seems to develop the peculiar force of narcotine, and since opium affords to ether, and also to ammonia, an unctuous or fatty matter, and a resin (the caoutchouc of Bucholz) to absolute alcohol, we are entitled to infer that the activity of opium is due to its state of composition, to the union of an oleate or margarate of narcotine with morphia. The meconic acid associated with this salifiable base has no narcotic power by itself, but may probably promote the activity of the morphia.

\* Edinburgh Phil. Journ. vii. 3<sup>rd</sup> S.

\* Annales de Chim. et Phys. xxv. 102.

Hence, though the weight of morphia obtainable from a given variety of opium may by no means represent the total essence of the drug, yet its quantity is most probably proportional to the powers of the opium. But morphia exists in the state of a meconate, and its quantity must be in equivalent ratio to that of the meconic acid. On this principle, a ready mode seems to offer of trying the comparative narcotic powers of different opiums. Let a grain or two of each be dissolved in a little dilute alcohol, and then diffused through such a body of water as will make the liquid nearly colourless. Pour each liquid into a graduated glass cylinder, and add to it a few drops of red muriate (or tincture of muriate) of iron. The characteristic brown-red tint will immediately appear, of a depth proportional to the meconic acid, and equivalent to the morphia present; for the previous dilution with water has been so great as to remove the inequalities of colour in the original spirituous solutions. Let the darker shades be now lightened with water till the tints of the whole be uniform; and the relative volumes of the liquids will afford an approximate measure of the qualities of the several opiums. It is obvious that a double quantity of any given opium will take a double volume of water to bring its meconate of iron to the standard shade. By this means different tinctures of opium may be very expeditiously compared in narcotic power.

I have tried, in this ready way, Turkey, English, and East Indian opium, and have found the results to harmonize sufficiently with their known powers determined by other methods. An improved East Indian opium, of which Dr. Chambers gave me a specimen, approaches by this test very closely to the quality of fine Turkey opium.

The employment of red muriate of iron as a re-agent for detecting the meconic acid of opium, has been frequently resorted to, under different modifications, since Vogel first pointed out the singular sensibility of that acid to the peroxide ferrous salts. I have found solution of acetate of lead, faintly acidulated with vinegar, the preferable re-agent for separating meconic acid, in the form of a meconate of lead, from solution of opium. The slight excess of acetic acid prevents any of the morphia from falling down with the oxide

of lead. Twenty-seven grains of washed, but still impure meconate of lead, may be obtained from one hundred grains of good opium—a result which I obtained both from the Turkey and the above East Indian. By treating this insoluble salt, diffused in water, with the equivalent quantity of sulphuric acid, or by a stream of sulphuretted hydrogen gas, the meconic acid is set free, and may be procured in small crystalline grains by slow evaporation of the filtered liquid. These grains, once concreted, are very difficult of solution in water, and may therefore be washed with this fluid. Of the washed grey-white grains, a solution perfectly colourless strikes a deep brown-red with a drop of permuriate of iron.

Another process for procuring meconic acid has been prescribed. The magma obtained by boiling magnesia in a watery infusion of opium, is to be washed first with proof spirit, to extract the narcotine and resin, and then with strong alcohol, to dissolve out the morphia. The residuary meconate of magnesia is to be digested in dilute sulphuric acid, and the meconic acid is to be thrown down from that solution by acetate of lead. The meconate of lead is to be washed, then diffused in water, and decomposed by a stream of sulphuretted hydrogen gas. The meconic acid is set free and dissolved, and may be procured, it is said, in impure, scaly crystals, by evaporation.

On this process it may be remarked, that the sulphuric acid of the sulphate of magnesia is unnecessarily dragged along, to the injury of the meconic acid; for sulphate of lead is formed simultaneously with meconate, on adding the acetate of that metal to the mixture of the magnesian sulphate and meconic acid; and these two insoluble salts, the sulphate and meconate of lead, afterwards evolve their acids simultaneously to the sulphuretted hydrogen gas.

Whereas, by throwing down the meconic acid by the just quantity of acidulous acetate of lead, washing the precipitate, and decomposing it, either by the equivalent dose of sulphuric acid or by sulphuretted hydrogen, we at once obtain a relatively pure meconic acid.

From the circumstance of magnesia precipitating both the meconic acid and morphia from an opium solution, it may be inferred that meconic acid will form an insoluble compound with magnesia.



But this is by no means the case, for if we heat a solution of meconic acid with magnesia in excess, no meconic acid is withdrawn from the liquid, for it strikes as deep a red, with permuriate of iron, as before the magnesia was presented to it; but acetate of lead separates the whole of the meconic acid from solution or tincture of opium; so that the supernatant liquid occasions merely a faint greenish-brown colour, with red nitrate of iron.

Among the criminal abuses of the diffusion of knowledge which characterize the present times, the administration of opium, or its tincture, concealed in various vehicles, by the lower orders, with the most felonious purposes, holds a conspicuous place. An atrocious crime of this nature was brought specially under my notice, about a year ago, in examining, by desire of the magistrates of Glasgow, the contents of the stomach of a man who had fallen a victim to these inhuman devices. Here the laudanum had been largely mixed with strong beer, and was sensible to the smell, in the liquor extracted by the stomach-pump. One portion of that liquor, treated with acetate of lead, afforded an insoluble precipitate, from which an acid, strongly reddening permuriate of iron, was separated by the agency of the sulphuric. Another portion afforded directly, with a few drops of the permuriate of iron, an evident reddish-brown tinge, very different from the drab or fawn-coloured precipitate occasioned in strong beer of the same quality by the same salt of iron. Other experiments were made, which it is unnecessary to detail at present. The chemical facts, joined to a body of circumstantial evidence, led to a conviction of the guilty pair, a man and wife, who were accordingly executed.

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When opium is dissolved in porter (good London), the detection of the drug becomes much more difficult than when it is dissolved in strong beer; for permuriate of iron produces with porter (lightened with an equal volume of water) nearly the same brownish colour, whether it be used as delivered by the brewer, or mixed with laudanum to the extent of thirty drops in two ounce measures. A very copious grey-coloured precipitate is thrown down from London brown stout by solution of acetate of

lead—nearly as copious, in fact, as from porter drugged, as above, with tincture of opium. And when these two precipitates, washed in filters, are decomposed by a little dilute sulphuric acid, they afford two liquids, which strike nearly the same red-brown tints with permuriate of iron. It is difficult to resist the evidence thus disclosed of the presence of opium in *genuine* London porter. Tincture of hop, diffused through water, becomes, with a few drops of permuriate of iron, a greenish liquid, quite different from the diluted porter treated in the same way.

Porter becomes turbid when supersaturated with water of ammonia, and lets fall a brown sediment, which, collected and washed on a filter, bears some resemblance to impure morphia, but possesses a very remarkable peculiarity: it neither reddens with nitric acid, nor does it suffer morphia mixed with it to be thereby reddened, or at least the redness is merely momentary, and passes, on the slightest heat, into a light yellow shade. This precipitate I shall make the subject of future researches. Tincture of hops, which becomes slightly turbid on mixing with water, is rendered limpid by supersaturation with ammonia.

It might be imagined that bone-black (animal charcoal) would decolour porter, so that the agency of permuriate of iron on its supposed meconic acid might be made more manifest; but this process is at best fallacious; since bone-black, boiled with a portion of dilute solution of opium, deprives it almost entirely of the power of affecting permuriate of iron; while the corresponding portion receives from that salt a deep red-brown colour.

Whenever morphia can be obtained apart, its identity may be determined by decisive characters; the bright red colour imparted by it and its acetate to nitric acid, and the greenish-blue tint to red muriate of iron.

I have not found the tincture of galls the delicate re-agent for morphia, even to  $\frac{1}{15000}$  part, which Dublane, the suggester of this test, announced. It affords, with a solution of acetate of morphia, a grey precipitate, which reddens with a drop of nitric acid; but tincture of gall cannot be used where gelatine, and other animal matters, attractive of tannin, are present. Even aided by alcohol, prescribed by Dublane for dis-

solving out the tannate of morphia from the tannates of gelatine and albumen, it will not answer; for Vauquelin tried, in this way, two portions of urine, one which contained morphia, and the other not; and he had the same result from both—because alcohol dissolves a great deal of the animal matter precipitated by the tincture of galls, and thus complicates the experiment\*.

Glasgow, Dec. 19, 1829.

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CASE OF  
ANEURISM BY ANASTOMOSIS,

*In which both the Primitive Carotid Arteries were tied.*

By R. D. MUSSEY, M.D.

Professor of Anatomy and Surgery in Dartmouth College, Hanover, New Hampshire.

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J. PATTEE, aged 20 years, consulted me in September, 1827, respecting a pulsating purple tumor, situated upon the vertex of his head, with a base of about five inches in diameter, and rising an inch and a half or two inches above the cranium. This tumor had existed from infancy, but had greatly increased within the last three years. Upon the apex of the tumor was a sluggish ulcer of an inch in diameter, which commenced two years before, had been slowly enlarging, and which had bled occasionally during the preceding spring and summer, and once to the amount of two quarts, as estimated by his physician.

The left temporal artery and vein, where they pass in front of the ear, presented through the integuments the appearance of a vessel five-eighths of an inch in diameter. This was so prominent in its winding course along the temple, and even to the base of the tumor, that its pulsations could be distinctly seen at the distance of *fifteen* feet. A vein which passed from the tumor down the forehead, was full and prominent, and half an inch in diameter; and when the head was shaved, more than *twenty* arteries running to the tumor were seen actively pulsating, none of which, as they appeared through the integuments, were less than a middle-sized goose-quill.

Curious to know what would be the

effect of securing the large arteries, from which branches were distributed to the tumor, I tied, on the 20th of September, the *left* primitive carotid. The tumor, after the operation, was a little less tense, and less livid; still the active pulsation of the numerous arteries upon the right side of the base of the tumor, rendered it evident that there was an adequate supply of blood. On the twelfth day from the operation I tied the *right* primitive carotid artery. The face was a good deal paler immediately after this operation, but what was scarcely to have been expected, the functions of the brain were not apparently disturbed. There was neither nausea nor faintness; the patient rose from the table, stood up, and while standing put on his vest and coat, and tied on his cravat; he then walked down two flights of stairs, got into a carriage, and rode to a distant part of the village, without feeling the least symptom of faintness, or manifesting signs of inconvenience.

The tumor, which after this operation was daily dressed with a compress and bandage, so as to make slight compression upon it, the compress being kept constantly moist with alum water, progressively subsided, and in about four weeks was reduced apparently to about one-third of its original volume. At this period the tumor became stationary, and in five or six days began very slightly to enlarge; its colour was a little deepened, and a feeble thrill corresponding with the pulse in other parts, could occasionally be perceived in the left temporal artery. These appearances indicating that nothing further was to be expected from the tying of the carotid, astringent applications and compression; I proceeded on the 22d of November, about six weeks from the second operation, to remove the tumor.

This was accomplished by first encircling the tumor by an incision made quite through the soft parts, and then rapidly dissecting away the whole mass from the pericranium. More than an hour was occupied in carrying the knife around the base of the tumor, the whole operation being conducted with immediate reference to the saving of blood. Not more than an inch and a half of the scalp was divided at a time, and immediately upon the division, firm compression was made upon each lip of the

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\* Quarterly Journal for March, 1830.

incision, while the vessels were secured by ligatures, more than forty of which were applied in going round the tumor. Notwithstanding, however, these precautions, it was estimated by all present, that blood to the amount nearly of two quarts was lost during the operation. The patient was faint, and continued very feeble for several hours. The naked pericranium, in extent equal to about twenty-five square inches, granulated kindly, and in eight weeks the wound was nearly healed. It was some months, however, before the cuticle, through its whole extent, became firm, so as to sustain itself under considerable variations in the state of the circulation. The patient returned to active labour upon a farm the following March or April, has continued it ever since, and has been one of the most athletic and industrious labourers I have seen.

This case is interesting in a physiological view, for at no period subsequently to the operation of tying the second carotid, with the exception of the faintness and debility which occurred from the actual loss of blood on the removal of the tumor, has there been a single symptom of deficiency of blood in the brain. Indeed, at one period, viz. in the spring of 1829, sixteen or seventeen months after the operation, the opposite state seems to have existed; as the patient had a flushed face, accompanied with head-ache daily for two or three weeks, and was not relieved essentially by cathartics. A single large bleeding entirely removed the symptoms.

The engraving represents the appearance of the tumor after the head was shaved, previously to the first operation\*.

November 24th, 1829.



ON THE  
REMOVAL BY OPERATION OF CERTAIN DEFORMITIES OF THE FACE.

By R. LISTON, Esq.

CASE I.

FIVE years ago I was consulted by Mr. M. then aged about 16, on account

of deformity arising from the loss of the columna nasi. Of the manner in which it was destroyed he gave the following history:—When at school, about four years previously, in playing at ball, one of his companions accidentally struck him on the face with the palm of his hand; great swelling followed, with

\* Amer. Journ. Med. Sciences, Feb. 1830.



obstruction of the nostrils: the case was neglected, and in eight or ten days profuse discharge took place, with diminution of the swelling. The discharge continued for a long time, and was attended with considerable fœtor; some small pieces of bone were thrown out, and at length the columna, the whole of the cartilaginous, and part of the osseous septum, were destroyed. When the patient applied to me, the ulcer had not entirely healed, and the point of the nose was supported by a prop made of wire, covered with oiled silk, which an ingenious dentist had provided him with. His appearance was by no means becoming, and he was anxious to have the deformity removed, if possible. At that time I proposed, so soon as the discharge had ceased, to furnish my patient with a new columna from the upper lip, and had several conversations with him and his friends on the subject. The proposal was, however, not acceded to, and I lost sight of Mr. M. until the beginning of the present year, when I was again applied to. There was now no ulcerated surface observable; it was, however, imagined some slight fœtor could be detected. The decoction of sarsaparilla was given, and a little liniment of citrin ointment and lime water occasionally applied to the nostrils. About the beginning of July, with the advice of Drs. Monro, Abercrombie, and Mr. McKenzie, the operation was performed as originally proposed. The inner surface of the point of the nose was pared; a bistoury was then twice passed through the upper lip, close to the root of the original columna, and each time carried down to the mouth, so as to include a slip of about one quarter of an inch broad. This slip, composed of skin, lining membrane, and interposed substance, was deprived of its prolabium, and attached by a pin passed obliquely through it and the inner side of the tip of the nose, and then secured by some turns of ligature. Two sewing needles, and twisted suture, sufficed to bring the lip neatly together. These were removed in a few days, and the lip, which was before too full, had united perfectly, with considerable improvement to my patient's appearance. Even though, as I had warned him might happen, the other part of the process failed, Mr. M. was now in a better condition than before submitting to the operation; but

the union of the slip was also perfect, and in a few weeks, by supporting it with a small round compress, and by plugging the nostrils, his appearance was totally changed; so much so, that from being constrained by the horrid deformity to confine himself to his house and surrounding grounds, for many years, he has been so metamorphosed that he can now mix in company, without its being observed that any operation had been performed to improve his countenance.

That part of the membrane of the mouth now forming the lower surface of the columna (the lip was not twisted, and thus the chance of failure much diminished) for some time remained reddish, but by exposure to the air, has now assumed the same colour as the surrounding skin.

#### CASE II.

[From the Journal of the Royal Infirmary.]

Anna Riley, admitted Aug. 10th. There is very copious and fœtid discharge from the nostrils; the triangular cartilage, and columna nasi, are completely destroyed; and the inner surfaces of the alæ nasi extensively ulcerated; the point of the nose has become quite flat and depressed, from the loss of the natural support. Disease is of six months' duration, and commenced without evident cause; she has never had lues venerea, and has never taken mercury.

11th.—Ulcer to be touched with the nitras argenti every second day; alæ nasi, and point of the nose, to be supported with dossils of lint. Meat diet.

18th.—Ulcer healing; discharge less, and not so fœtid.

R S. Zinci ʒi.

Spirit. Lavand. ʒss.

Spirit. Rosmarini ʒii.

Aquæ ʒxxx.

Fiat lotio ulceri applicanda.

Oct. 7.—Ulcer has been quite healed for some time past. To-day Mr. Liston performed the following operation:—Having pared the inside of the point of the nose, he made two parallel incisions through the whole extent of the upper lip, on either side of its centre, and separated from each other by a distance of three lines; the mucous membrane having been removed from the free end of the portion of the lip comprehended within the two incisions, was preserved

in contact with the pared surface of the point of the nose, by means of a needle passed through both, round the end of which silk was twisted. The wound in the lip was united by the hare-lip suture.

11th.—The needle through the point of the nose was removed two days ago, and to-day the two remaining ones have also been withdrawn. Both wounds have adhered by the first intention.

On the 13th of October she was attacked with dysentery, from which, by the use of leeches and opium, she had completely recovered by the 21st. The *alæ nasi* since the operation have been supported by lint, and latterly a lotion of the sulphate of copper has been applied.

27th.—To-day she has been dismissed cured, her appearance much improved by the operation: the apex of the nose has acquired its natural prominence, and the new *columna* effectually conceals the deformity arising from the destruction of the septum. The inferior surface of the *columna* still retains some of the characters of the mucous membrane.

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At one time (and even now a-days by some practitioners) both these patients would have been looked upon as sufferers from their own, or perhaps their parents' indiscretions. Many noses, and parts of them, have been lost, even within my recollection, from the consequences of venereal diseases, or, I should rather say, from the effects of the remedies extensively and indiscriminately employed, and reckoned absolutely necessary for their eradication.

I was consulted lately by a gentleman as to the possibility of improving his appearance. He had, or supposed that he had, about 20 years ago, contracted syphilis; he was salivated till, from the swelling, his features were almost indiscernible: the discharge was so copious and so long-continued, that he tired conveying a vessel constantly to his mouth, and had one contrived to sling under the chin from his neck. Purulent matter began to flow from his nostrils, and to check it, fumigations were employed. A crust was formed, a complete mould of that part of his features when it separated; the *columna* and cartilaginous septum fell with it.

It is probable that he may yet submit to the modification of the rhino-plastic operation, as above described. Happily the number of persons so disfigured is now much diminished.

The cartilages or bones may suffer from ulceration commencing in the mucous membrane, in consequence of injuries, or irritations of various kinds, as well as from disordered health. I have seen some cases in which ulcers perforating the septum have apparently been kept up, if not produced, by snuff-taking; others which could be traced to the presence of the decayed fangs of the incisors of the upper jaw. In one case a dentist had persisted, notwithstanding fetid discharge, &c. in keeping false teeth over the stumps, a practice which cannot be too much deprecated. But this useful and ornamental part of the face may suffer from the effects of direct injury, as in the first, and probably the second case related. The most common cause of destruction of the partition of the nostrils is abscess in the submucous cellular tissue; generally arising from blows. I have not, in surgical books, met with any notice of collections in this situation.

The first such case which occurred to me in practice was that of a dissipated comedian, who had received (so far as I recollect, from his amiable helpmate) a blow on the lower extremities of the *ossa nasi*. He presented himself to me on the sixth day after the accident, with both nostrils obstructed by bulging of the *schneiderian* membrane of the septum. The tumor fluctuated, was opened on both sides, and a great quantity of pus discharged. A portion of the septum was destroyed, and some deformity ensued. A considerable part of the cartilaginous septum may, however, be removed, without the loss being indicated by any change in the external form of the organ. In cases of abscess, the destruction of the septum can only be prevented by an early opening. I have treated in all seven cases of this disease, and in but one, besides that above related, has the least deformity taken place.

Edinburgh, March 23, 1830.

## A NEW METACARPAL SAW,

INVENTED BY

J. W. CHEVALIER, Surgeon.

A CONSIDERABLE time has now elapsed since I was consulted by a gentleman of rank in this metropolis upon the expediency of removing a tumor, of the size of an orange, which projected over the palm of his right hand, from the remaining stumps of the metacarpals of his little and ring fingers.

He had already submitted to two operations for the same disease, the latter of which took place not less than *seventeen years* ago; and on both occasions it was found to consist of a semi-cartilaginous structure, supported by an arborescent exostosis. It had hitherto caused no further inconvenience than that arising from its bulk.

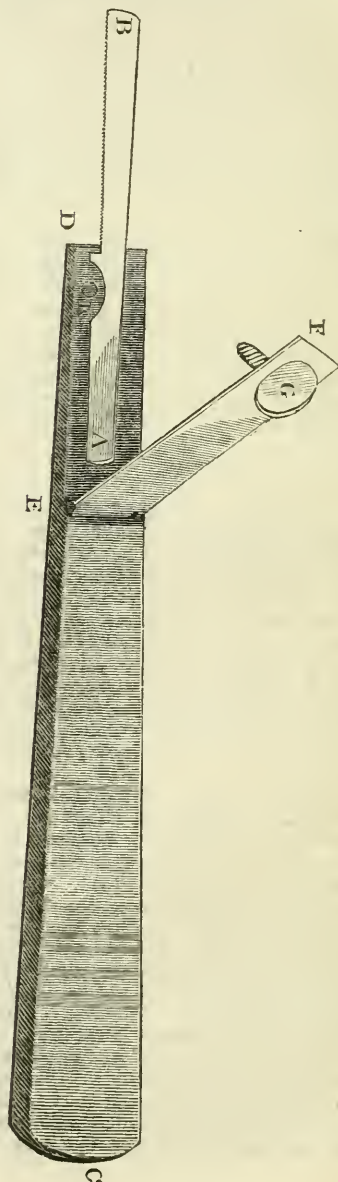
I found that there still remained a sufficient extent of the metacarpal bones in question, to admit of the removal of the tumor without opening the joint of the wrist; and although the disease in this case would not be eradicated, more especially as it appeared to have attacked already the styloid process of the ulna, yet it would in all probability be rendered innocuous for the remainder of the patient's life; while the valuable use which he retained of the remaining fingers and thumb would still be preserved, and all risk from exposure of a cavity so complicated and important as that of the carpus, would be effectually avoided.

The portion of bone which continued free from disease was, however, so small, that without any question, the ordinary metacarpal saws must have fractured it; or at all events, have rendered it carious, by the violence of their operation. A fourth of an inch in thickness was as much, or more, than I could hope to save between the surface of the wound and that of the perichondrium within the joint; and before this, I had had opportunities of witnessing the havoc that is often created in the hands and feet with those coarse and unsurgical instruments usually employed in such cases.

I therefore contrived a new one, represented in the annexed drawing, and as a considerable number of trials has convinced me of its utility, I think it right to offer it to the notice of the profession, and to recommend its use in cases in which it may be deemed advisable to saw through the metacarpal

or metatarsal bones, rather than to lay open their capsular ligaments. It should be used with a light hand, and patiently; for the smaller the teeth of any saw, the greater the number of strokes which it will require to cut through a given substance.

62, Torrington-Square, April 2, 1830.





*Explanation of the Figure.*

- A B, a moveable saw-blade, made of watch-spring.  
 C D, the handle; which is split into two, from D to E.  
 E F, a portion of the handle, lifted up to admit the saw-blade into its proper groove, in E D.  
 G, a screw at the extremity of E F, which, in fixing the instrument, is received into the worm, at K.

## TUMOR IN THE CHEST.

*To the Editors of the London Medical Gazette.*

GENTLEMEN,

SHOULD you deem the following case sufficiently interesting to merit a place in your journal, you will oblige me by giving it insertion.

I have honour to be

Your very obedient servant,

J. COLLIER,

Memb. Roy. Coll. of Surgeons.

Syston, Leicestershire,  
 March 18, 1830.

Henry Ward, aged 7 years, of a scrofulous and delicate constitution, has from infancy been subject to shortness of breathing and slight cough.

In March last he was thrown from a donkey, and fell on the right shoulder. Nothing of any material importance followed, except some bruises of the part, from which he recovered in a few days.

In July following it was noticed that he became much fatigued after any little exertion, as walking, and frequently during the day begged of his friends to allow him to go to bed.

In the early part of September a small tumor was discovered in the situation of the left mamma, evidently protruding forwards from the ribs; it gradually enlarged, and at the close of the year had attained the size of a large orange. At first it was unattended with much pain, but became more so latterly. It possessed a hard feeling to the touch, with very little elasticity or fluctuation. There were three projections in different parts of the tumor, but no consent between them. At the end of February the tumor had become more

prominent in the centre, and at that point felt soft to the touch; a lancet was introduced into it, but only a small quantity of dark blood followed, and portions of fleshy matter.

The integuments covering the tumor were not discoloured. The heart was felt to beat on the right side of the sternum. The glands in the axilla were slightly enlarged.

The constitutional disturbance was great—such as restlessness, difficulty of lying down in bed (the easiest posture was on the left side); cough, without any expectoration; great emaciation; occasional flushes of heat, and perspiration. Pulse small and weak; average rate 100. Appetite sparing. Little was done in the way of treatment except giving him laudanum, to procure sleep, and aperient medicines, with fomentations and poultices to the part. He gradually became worse, the legs swelled, and he died on the 11th of March.

*Post mortem Examination.*—On raising the integuments, the lower portion of the pectoralis major (its fibres were thin and pale) was seen covering the upper half of the tumor, which, when fully exposed, was found to be closely adherent to the ribs. By dissecting it away from its attachment, a large opening was found (about three inches in diameter) through the fifth, sixth, and seventh ribs, into the chest; the bones at this part having become carious and broken down.

The tumor, when cut into, exuded spots of purulent matter in various parts, whilst the part contiguous to the opening of the chest was found to have small spiculæ of bone intermixed with it. On opening the chest, and raising the sternum and cartilages, a large white substance (six ounces by weight) was found occupying the anterior mediastinum; it had much the colour and consistence of cheese, and when cut in various parts gave vent to a purulent matter of a tolerably healthy appearance. A considerable quantity of serous and purulent effusion was found in the left side of the chest.

The left lung was completely broken down in texture; not a single particle of it could be found at all healthy; it instantly gave way to slight pressure between the thumb and finger; the whole of it had been greatly enlarged, which, together with the white sub-

stance, occupied more than one half of the chest, and thus, by its increase, pushed the heart to the opposite side.

The right lung was healthy, with the exception of three small prominences on its surface, which, when opened, gave issue to a purulent discharge.

The heart was found placed between the right lung and the tumor in the anterior mediastinum; it was small and flabby, but otherwise quite healthy.

Pericardium a little thickened.

Pleura costalis healthy, except near to the diseased parts of the ribs.

# ON THE SIMILARITY OF VIEWS

ON

## DISEASES OF FEMALES,

OF DR. MARSHALL HALL, AND DR.  
ADDISON;

By \*\*\*\*\*.

WHEN different men take up the same investigation independently of each other, and come to the same or similar conclusions, it affords a strong presumption that they have alike arrived at the truth. This agreeable conviction flashed upon my mind, the other day, as I was reading the able and eloquent lecture of Dr. Addison on disorders of females arising from uterine irritation. How identical, said I, are these observations with those of Dr. Marshall Hall. I turned to Dr. Hall's volume, and I was more and more struck with the force of

truth as displayed by the similarity in the conclusions drawn by these authors from their distinct observations of the same objects.

The reader will partake of my feelings on casting his eye over the following parallelism of passages, extracted from the two works of these two writers. Indeed the only difference appears to be their views of the causes and effects in the series of the phenomena. But I will proceed to give the parallel, and subjoin any remarks I may have to make of my own; simply premising that Dr. Hall first traces the general symptoms, and counts the morbid affection of the bowels amongst the first, and that of the uterus amongst the subsequent links of the chain. Dr. Addison inverts this order: let the reader compare pages 15, 25, 51, 59, of the former author, with pages 10, 21. Having made this remark, our work will be much shortened.

### *Dr. Addison states:—*

1. Of these painful affections, the most frequent are—1, pain situated under the left mamma, or under the margin of the ribs of the same side; 2, pain under the margin of the ribs of the right side; 3, 4, pain in the course of the descending, or of the ascending colon; 5, pain affecting the abdomen generally; 6, pain in the region of the stomach; 7, pain in the region of the kidney; sometimes extending down the course of the ureters to the bladder; (*abridged from page 21.*)

2. I have known patients literally blanched by repeated bleeding and cupping to remove the neuralgic pains.

3. I say nothing of blood-letting, as the propriety or impropriety of this must be apparent from the state of the circulation, always bearing in mind that such subjects bear bleeding badly, &c.  
—Page 40.

### *Dr. Hall states:—*

1. In the course of this disorder there is frequently pain, more or less severe, more or less continued; and in such different forms and situations as to resemble, in different cases, attacks of gall-stones, inflammation of the liver, spleen, kidney, or of the intestine, or peritoneum. There are sometimes symptoms of affection of the bladder. The pain of the side is peculiar, and too common to be a mere accidental complication.—Page 63.

2. The first case in which I saw the necessity and importance of these distinctions had been successively treated as inflammation of the brain, and inflammation of the liver, by bleeding, blisters, and leeches, to an almost incredible extent.

3. A source of distinction exists in the effects of remedies; early fainting from blood-letting is observed in the complications of disorder of the general health; inflammation on the other hand seems to protect the system from the effects of loss of blood, &c.

But it would take me too long to enter fully into a comparison of the opinions of these two authors. I would merely add that the list of remedies is very nearly the same.

In fact, the same cautions not to bleed indiscriminately and indiscreetly—not to esteem this *the* remedy, yet not to neglect it absolutely in every case, but rather to have recourse to aperients, to the class of anodynes, to counter-irritants, or to local applications of a soothing nature. These are the distinctions given alike by Dr. Addison and by Dr. Marshall Hall.

And now I am upon the subject, I would just mention that Dr. Abercrombie, and the lamented Dr. Gooch, have also recently been plainly led into a similar train of thought and of investigation. They who feel interested in the subject may turn to page 67 of the second edition of the work of the former of these authors on Diseases of the Brain, and to Dr. Gooch's work, page 144.

Indeed, after all that has been recently done in this matter, no one can doubt that there exists two classes of morbid affections: the first that of inflammation, the second that of irritations. Our language is still, indeed, too vague on these subjects. M. Broussais' irritation, for instance, is but a lower form of inflammation. May not the same be said of Dr. Gooch's irritable uterus? However this is confounding things that are different; local pains, not inflammatory, nor even sub-inflammatory, exist from intestinal, or uterine, or renal, or other irritation, not requiring, not bearing, blood-letting; but yielding, satisfactorily, to another class of remedies. Dr. Addison and Dr. Hall have at least established these points—points not less obvious, and far more important in practice, than the addition to our museums of mere scraps of morbid anatomy.

It now remains an admitted fact, then, that irritation and inflammation are alike real existences in nature: that we must bleed to cure the one, that we must not bleed to cure the other; that we, in a word, must apply a distinct class of remedies in these distinct cases of morbid affections.

## ANALYSES &amp; NOTICES OF BOOKS.

“ L'Auteur se tue à allonger ce que le lecteur se tue à abréger.”—D'ALEMBERT.

*Sketches of the Medical Topography of the Mediterranean; comprising an Account of Gibraltar, the Ionian Islands, and Malta: to which is prefixed, a Sketch of a Plan for Memoirs on Medical Topography.* By JOHN HENNEN, M.D. F.R.S.E. Inspector of Military Hospitals, &c. Edited by his Son, J. HENNEN, M.D. Mem. Royal Med. Society, Edin. &c. 1830.

WHEN, a few weeks ago, we recommended Dr. Hennen's “Principles of Military Surgery” to our readers, we did not think we should so soon again have had occasion to notice another work by the same author. Dr. Hennen was a distinguished ornament of the department to which he belonged, and has done much by his writings to advance military medicine and surgery; while the example of his activity and zeal will prove a stimulus to the industry of those who come after him. Our professional brethren in the army have, far beyond civil practitioners, an opportunity of observing disease in a variety of climates, and modified by the differences which prevail in the habits of different nations. Too often these opportunities have been suffered to pass unimproved; but of late years these investigations have been much encouraged by Sir James McGrigor, to whom the medical officers of the army are in no small degree indebted for the high rank they hold in the professional community. Many of Dr. Hennen's remarks were originally contained in official reports made to the Director-General, and we observe that it is under his “encouragement and support” that the work now appears edited by the son of its deceased author.

The present volume is chiefly occupied by observations relative to the medical topography of the Mediterranean; those classic shores, where each rock has its name, and every rivulet has been the theme of poets. How mortifying the picture presented by the author before us of the altered condition of these countries!

The general plan adopted by Dr. Hennen, and recommended by him for



the conducting of similar investigations, is to treat, *first*, of the physical geography of the place to be described, with notices relative to its natural history; *secondly*, of the inhabitants, as to their food, manner of life, &c.; *thirdly*, of diseases, whether endemic, epidemic, or sporadic, affecting the human species, the lower animals, and plants; and *fourthly*, of various miscellaneous subjects not coming under the other heads.

Under these different divisions we have a mass of well-arranged and accessible facts connected with the medical topography of Gibraltar, Corfu, Cephalonia, Zante, Santa Maura, Ithaca, and Malta. The first and last of these occupy the greatest share of attention, as the most important stations. In the account of Malta there is much very interesting information on the subject of the plague, which alone will render the volume one of frequent reference.

The nature of the work necessarily precludes the possibility of analysis, inasmuch as it consists of a collection of detached facts; but we shall occasionally avail ourselves of these, and lay some of them before our readers as opportunity serves. At present, we wish to direct the attention of all interested in the pursuits which are comprised under the title of "Medical Topography," to the great assistance which the labours of Dr. Hennen are calculated to afford them, and in an especial manner we would point it out to the medical officers of the army, as a work which none of them ought to be without.

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## MEDICAL GAZETTE.

*Saturday, April 17, 1830.*

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"Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."—CICERO.

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### ATTACKS ON DR. BURROWS.

The "Times," a few days ago, in commenting on Dr. Burrows's letter to Sir Henry Halford, while it admitted that the Doctor had been "unfairly treated," and had satisfactorily disproved "the most material of the imputations cast on his character," added, nevertheless, that there was no combination

against him as he seemed to suppose; and, in fact, that he was not of sufficient importance to be the subject of a "conspiracy." Now in all this we quite agree with the "leading journal;" but although there may have been no conspiracy, there certainly has been a succession of unfounded attacks on that gentleman's character,—there has been a regular *set* made at his reputation by the public press.

John Bull is the creature of prejudice. An ignorant quack, who cannot write two sentences grammatically, and who is as innocent of medical knowledge as he is of witchcraft, is allowed to humbug the public, and the conductors of the press look quietly on and let it pass—because it is the fashion. Again, if a well-educated, experienced, and skilful practitioner, make but the smallest mistake—real or supposed—the public vie with each other in running him down—he forthwith becomes the object of general condemnation, and all vent their virtuous indignation against his supposed atrocities. Persons who never take the trouble to inquire into the facts, are yet content to express their opinions as confidently as if they were quite masters of the case: anonymous writers in the daily papers are suffered to become parties in the discussion, and then farewell to any thing like common sense; thenceforward it is all hue and cry and clamour, and the *mad doctor* is hunted down like a mad dog.

The public in general know very little about the powers which set in motion much of the machinery by which they are influenced: a police reporter, for instance (a person occupying one of the lowest in the many grades of the literary community), in order to render his contributions more piquant, throws a colouring over what he has occasion to record which, without an absolute perversion of truth, may

yet give a different aspect to the whole transaction; and from this source, insignificant as it intrinsically is, did much of the clamour against Dr. Burrows originate. We are not now going to discuss the question of Mr. Davies's sanity or insanity; but we are anxious to direct the attention of our readers to one of the consequences which has grown out of the late commission of lunacy, and although it refers more particularly to an individual, it cannot be uninteresting to the profession at large. No one can tell when his turn may come to be put to a similar trial; indeed, the more elevated the place any one holds, the more exposed he is to have his reputation tainted by the breath of calumny.

That Dr. Burrows was the object of *ex parte* statements in the newspapers, no one who reads his letter can doubt. Fortunate was the event for those opposed to him in the case of Mr. Davies, for he became a marked man, whom it was both safe and expedient to attack. The conduct of barristers on some occasions is very extraordinary: out of Court they are generally found to be liberal-minded and gentlemanly men, but the moment they put on their gown, these qualities seem to be laid aside. We could allow much to the zeal of pleading, and the excitement of rivalry; but there are some things which we cannot so easily reconcile to our notions of right and wrong. We should think, for instance, that a falsehood was no less a falsehood when uttered in gown and wig, than spoken in a man's ordinary costume; yet it is notorious that counsel positively assert, not only what they do not know to be true—but what they do know to be false. Thus in the case we are considering, various charges were advanced against Dr. Burrows, involving both his professional and moral character, which were utterly destitute of foundation; yet is not the counsel who made

them regarded as having exceeded his duty! There is another rather singular circumstance connected with this point: when evidence was offered to disprove these allegations, it was refused, as not consistent with the practice of the Court. Now to men not initiated into the mysteries of the law, it appears somewhat paradoxical that it should be according to rule to suffer statements to be made, and against rule to admit counter-statements. One would suppose that if an allegation were relevant, it would be deemed essential to ascertain whether it were true or false. While it is otherwise, well may the decisions of the law be proverbial for their uncertainty!

The leading counsel for Mr. Davies directed all the power of his eloquence and concentrated bitterness of his sarcasm against Dr. Burrows, and the press forthwith re-echoed the clamor.

But will it be credited that the Quarterly Review has joined in the common cry—that the Quarterly, which used to hold so high a rank in the periodical literature of the country, has descended from the dignity of the critic to the personality of the partizan—that it has endeavoured to connect the names of Burrows and Davies as those of the oppressor and the oppressed? The public mind, which is always roused into phrenzy when any one but hints at danger to the liberty of the subject, was beginning to recover its healthy tone, when, lo! the Quarterly comes out with a thundering article, in which the injustice and asperity of all who had preceded it are far outdone. A work of Dr. Burrows, long published, is placed at the head of a discussion on the case of Mr. Davies. Dr. Burrows, who did not sign the certificate of his insanity—who did not send him to Clapham—who, when there, used every effort to have him removed; Dr. Burrows, against whose humanity and skill there is not the sha-

dow of an imputation, is ironically depicted as his "gentle and judicious" physician, endeavouring to incarcerate him in a strait-waistcoat;—and worst of all, Dr. Burrows, who in this business has been more sinned against than sinning, is stigmatised as the inventor of a new crime, to which his name is to be attached like that of the notorious criminal Burke. "Let all the friends of the BURROWSED (says the Quarterly) remember this lesson." It is sufficient to point to these circumstances to rouse the indignation of our readers; it is unnecessary for us to enlarge upon their injustice and cruelty.

But we have another motive for alluding to this article, and another character to clear. It is generally attributed to the pen of a late distinguished physician. Some part of it is doubtless his—yet even that part was written on his death-bed, when his mind and body were alike weakened by disease; it displays not the terse vigour of his former essays. But there are portions of it which we are satisfied Dr. Gooch never penned;—such, for instance, is the above miserable attempt to coin a word, and for ever stamp with infamy the name of a humane and meritorious physician. We speak not unadvisedly when we assert, that the most objectionable passages in the Review were added after it had passed from Dr. Gooch's hands.

Of Dr. Burrows personally we know nothing. It is but lately that we criticized his opinions on some points, with regard to which we had the misfortune to differ with him, while then as now we entered upon the subject exclusively on public grounds. The members of our profession ought to make it common cause, and by their general support, prevent those injurious consequences which such a succession of attacks must otherwise be calculated to entail upon their object.

## REMUNERATION OF GENERAL PRACTITIONERS.

THERE are some misapprehensions afloat on the state of the law as regards the remuneration of general practitioners. There is no legal enactment by which they are entitled to charge for attendance as well as medicine, nor did any such clause ever pass the House of Commons, as was erroneously stated in the *Lancet* last week. At present the only safe mode is for the practitioner to come to an understanding with his patient that he is to receive compensation for his attendance instead of his physic; and this, in the majority of cases, might be done without difficulty. The decision of Lord Tenterden, in the cause of *Handey versus Henson*, was evidently the result of that learned Judge's sense of what was right and fitting; but it neither has, nor can have, the authority of a legal enactment. To conceal this is quite absurd, for it is of the utmost importance for the general practitioner to know on what ground he really stands, and not to be misled into false security. That the clause alluded to never "passed the House of Commons," will appear by the following extracts.

*From the Times of Tuesday, June 21, 1825.*

"HOUSE OF COMMONS, JUNE 20.—The report of the Apothecaries' Bill was brought up, and a clause introduced by Mr. Hume, enabling apothecaries to charge for their attendance as well as for medicines only. That clause was agreed to without a division, and the bill was ordered to be read a third time on Thursday."

*From the Times of June 25, 1825.*

"HOUSE OF COMMONS, FRIDAY, JUNE 24, 1825.—On the motion of Mr. Brougham, the Apothecaries' Bill was read a third time, and passed; omitting a clause respecting a new mode of professional payment."



## ROYAL INSTITUTION,

Friday, April 2, 1830.

WHITLOCK NICHOLL, M.D. VICE-PRESIDENT,  
IN THE CHAIR.*Mr. Ainger on Radiation.*

NOTWITHSTANDING the doctrine of cold being a positive principle, which once very generally prevailed, has long become obsolete among philosophers, there are some phenomena attending radiation which have been thought to favour a belief in the existence of frigorific rays, and they have been alluded to lately, particularly in the *Encyclopædia Metropolitana*, as phenomena still unexplained, although, we believe, the rationale of the supposed paradox has been before the public for upwards of a quarter of a century.

To this circumstance Mr. Ainger directed the attention of the members, and illustrated his explication by a few experiments. It is somewhat difficult to isolate, and yet render intelligible, a fact so closely connected with the general principles of thermosophy, but we will endeavour to state the question briefly. All bodies, whatever be their temperatures, radiate heat, although in different proportions. A vessel of boiling water and one containing ice or snow both radiate heat, and though the one would seem hot and the other cold, as compared with the standard temperature of the human body, both would be cold as compared to molten gold—both would be hot contrasted with frozen mercury. All bodies likewise *reflect* heat, or at least a part of that which is radiated from other bodies, and impinges on them: those which reflect the most, radiate the least, and those which radiate the most, reflect the least, radiation and reflection being in an inverse ratio to each other; polished white metallic surfaces being the best reflectors and worst radiators, and rough black ones of paper, charcoal, &c. the best radiators and the worst reflectors; say in round numbers  $\frac{1}{10}$  and  $\frac{9}{10}$  to  $\frac{9}{10}$  and  $\frac{1}{10}$ .

If a cool body, say a vessel one half blackened and one half bright, filled with ice or snow, be placed in a chamber, the thermometric temperature of which is  $60^{\circ}$ , very different phenomena result, if thermometers be placed at equal distances from it, according as

the surfaces are rough and black, or smooth and polished. Now as by the laws of radiation a rough black surface radiates about 9 times more freely than a smooth polished white one, the thermometer will receive from it 9 times as much radiant matter as from the other, and hence it has been argued, that it ought, when exposed to the rough black surface, to indicate a higher temperature, if heat only be radiated and not cold as well, than when exposed to the smooth polished side, which radiates only 1-10th as freely. The reverse, however, is found to be the fact, and this phenomenon has been supposed to favour the doctrine of the radiation of cold, or at least to be an opprobrium to modern thermology. But the argument is fallacious, and the explication very simple. All bodies radiate a part of the heat which they contain; at the same time reflecting one part, and absorbing another of that which they receive; and these processes continually going on, tend of necessity to equalize the temperatures of all bodies within the influence of each other, and to maintain them at a mean. Hence reflection, as well as radiation, becomes an important element in the account, and it was from the omission of this that the difficulty arose; for the polished surface, although it *radiate* only 1-10th so much heat as that which is rough and black, it reflects to the thermometer 9-10ths more of that heat which it receives from surrounding objects than does the rough and blackened side; and as the heat of the chamber is, by the statement, greater than that of the vessel, the phenomenon which does occur, and which has been esteemed a stumbling block, in fact should occur, when the calculations are correctly made. It is important that these explanations should be known, and we are glad to find them exciting the attention of philosophers.

*Medal for Botanical Students, Zoological Specimens, &c.*

In the library were several interesting zoological specimens, a queen white ant, scorpions from the Eastern Archipelago, &c. &c. a piece of wood and metal pierced by an insect; various models in costume of native Indians; and what we must not omit to notice, a very chaste and beautiful design for a medal proposed to be given to botanical students by the Apothecaries' Company.

*Fatal Accident from Nitric Ether.*

After the lecture, a gentleman communicated to us the following accident, which lately occurred at a druggist's, from a carboy of nitric ether being placed in a bed-room, and which bursting during the night, the chamber, the door of which was shut, and in which there was no chimney, became filled with the vapour, and the death of the servant, who was asleep, was the result. This is, at least, the second case of the kind which has come to our knowledge, and some discussion ensued as to whether death was occasioned by any directly deleterious quality of the vapour, or indirectly by the exclusion of atmospheric air; the latter, we should think, the more probable hypothesis.

The meetings were this evening adjourned till after Easter, and the continuation of the Phonical Experiments announced for April 23d.

## EXTRACTS FROM JOURNALS,

*Foreign and Domestic.*

## PHYSIOLOGICAL PHENOMENON PRODUCED BY ELECTRICITY.

THE following singular results are by Professor Marianini, of Venice. He has stated, in a memoir published some time since, that a difference existed in the contractions of a frog when the electricity acted immediately upon the muscles, and when it acted upon the nerves which presided over the muscular motions; the former were called *idiopathic convulsions*, and the latter *sympathic convulsions*. The difference consists in this, that the former contractions occur in whatever directions the current of electricity traverses the muscles, whilst the latter take place only when the current which traverses the nerves proceeds in the direction of their ramification.

From this it follows that, when a current traverses a limb in the direction of the nerves, the two shocks should occur together; but, when it proceeds in the contrary direction, only the idiopathic convulsion should be produced. In the first case, therefore, the contraction should be stronger than in the second.

If the right hand be in contact with

the positive pole of a voltaic battery, and the left hand equally in contact with the negative pole, a contraction is felt in both arms every time the circuit is completed, but stronger in the left arm than in the right. If the direction of the current be inverted, the right arm feels a more powerful convulsion than the left.

If a hand be in contact with the positive pole, and a foot in contact with the negative pole, the circuit will be in the direction of the nerves in the leg, but not in the arm; and the contraction is much stronger in the leg, where the two effects are simultaneous, than in the arm, where the idiopathic effect only is felt. The same effect takes place if the electricity is passed from the shoulder to the hand, from one foot to another, from the knee to the foot, &c. &c.

This striking difference varies in different persons, especially in those who are paralytic. The current, from eighty pairs of plates, being passed from the hand to the shoulder of a person struck with hemiplegia, the muscles of the arm were scarcely contracted at the same place, where the convulsion was very strong, when the current was passed from the shoulder to the hand.

Sometimes this difference existed only in one limb. A woman, who had lost the use of the lower limbs, in consequence of an inflammation of the spinal marrow, felt the left foot contract with most force when it touched the negative pole of the pile; the right foot contracted with equal force, whether it was in contact with the positive or negative pole. This effect appeared to be due to a loss of nervous sensibility in the right foot, so that they had become indifferent to the direction of the electric current.

If a finger be immersed, as far as the second joint, in water, connected with the positive pole of a battery containing twenty-five or thirty pairs of plates, and the circuit be completed by touching the negative pole with a metallic cylinder, held in the other hand wetted, a shock is felt in the finger, not extending beyond the second joint: if the direction of the current be reversed, the shock is felt in the third joint. Upon giving attention, it will be found that the first shock is more external, and accompanied by a distressing sensation; whilst the second shock is more deeply

felt, and is accompanied by no particular sensation at the place where the finger touches the water. The effects are accounted for by the supposition that, when the finger touches the negative pole, the simultaneous occurrence of the two convulsions causes the stronger contraction; and that, when the finger touches the positive pole, the electricity which traverses the nerves proceeds in a direction contrary to their ramification, and in place of producing a shock, occasions the peculiar sensation.

If two metallic cylinders be covered with wet cloth, and one being held in each hand, contact is then made with thirty or forty pairs of plates, moderately active, besides the shocks which are felt each time the communication is completed, there is a particular sensation in the palm of the hand, communicating with the positive pole. This sensation has been very distinct in some persons sensible to the effect of electricity; and they compared it to that pricking sensation often felt in the hands or feet when the nerves have been compressed for some time together.—*Quarterly Journ.—Bib. Univ.* xlii. 287.

became the particular substance. Corrosive sublimate, equivalent to 6 grains of peroxide, only remained undecomposed, and of course some peroxide remained diffused through the precipitate: this may be removed by boiling the whole with about 100 grains of muriatic acid diluted with water; the salt is then perfectly black, dense, crystalline, and frequently very brilliant.

Mr. Phillips calls this substance a dipermuriate of mercury; considering it not as a compound of oxide and chloride of mercury, with water of crystallization, but of muriatic acid and oxide of mercury. That it contains no water of crystallization is considered as proved, because, when the crystals are put into a glass tube, and the latter heated in a salt-water bath, no moisture rises from them, and the crystals undergo no change. At a higher temperature, water, corrosive sublimate, mercury, and calomel, are produced.

Considered as a dipermuriate of mercury, the composition of this substance is as follows:—

Muriatic acid.....	1 atom ...	37 or 7.8	
Peroxide of mercury, 2 atoms ...	432	92.2	
		469	100.

*Phil. Mag. N. S.* vii. 129.

#### ALIMENTARY TUBERCLE OF VAN DIEMEN'S LAND.

On adding carbonate of lime to a solution of corrosive sublimate, and heating the mixture, a dark-coloured precipitate was formed, crystalline, very heavy, and the larger crystals nearly black; very slightly soluble in boiling water, and scarcely at all in cold. It dissolved in acids, and gave peroxide of mercury by potash, and chloride of silver by nitrate of silver.

Upon trial it was found that no excess of carbonate of lime rendered the change of the corrosive sublimate complete, the muriate of lime formed at the same time producing a counteracting effect. When hard carbonate of lime, as calcareous spar, was put into the corrosive sublimate solution, months were required to obtain only a few crystals of salt. Powdered and precipitated carbonate of lime acted more readily.

The following process gave the new compound quite pure:—272 grains or 1 atom of corrosive sublimate was dissolved in water, and boiled with 648 grains or 3 atoms of peroxide of mercury; a dark precipitate soon began to form, and eventually nearly the whole

A singular substance has been found at the depth of a foot or a foot and a half in the earth of that country. It has not yet been described, but is called *indigenous bread*. It is covered with a thin skin, has a rounded form, like a potatoe or yam, and is sometimes as large as a man's head. When cut, it appears as if composed of a solid spongy mass, containing a considerable quantity of alimentary matter. No root or fibre has been found adhering to it, so that sometimes it has been thought to be a sort of terrestrial polypus, possessing a principle of animal life. The only indication of its presence which the natives have, is the occurrence of an exceedingly small leaf, which rises from the earth, and is connected with it by very thin and delicate fibres, which break whenever the tubercle is raised.

—*Asiatic Journal*.



## HOSPITAL REPORTS.

## SMALL-POX HOSPITAL

*To the Editor of the London Medical Gazette.*

SIR,

A PERUSAL of the last report to parliament from the National Vaccine Establishment (see London Medical Gazette, No. 122, page 24) has induced me to think that a brief sketch of a series of cases in which small-pox has succeeded to vaccination, may not be without its use at the present moment. Such a detail I have the honour now to enclose. It comprises the history of every case admitted into the small-pox hospital after (presumed) vaccination between the 1st January and 1st April of the present year. They amount in number to twenty-five. Instead of describing them, however, in the order of their admission, I have thought it best to arrange them in the order of their severity, beginning with the mildest. My object being a faithful narration of facts, I shall refrain from all comment upon the cases, at least for the present.

I remain, Sir,

Your very obedient servant,

GEORGE GREGORY.

31, Weymouth Street, Portland Place,  
April 9, 1830.

*Cases of Small-Pox after presumed Vaccination.*

CASE 1.—Sarah Grnnstrest, æt. 16, was vaccinated at Ashford, in Kent, when young. Has upon the arm one excellent cicatrix. The small-pox proved of an exceedingly mild sort, maturing on the fifth day. These cases, which are usually called chicken-pox in the adult, I distinguish by the title varicella variolodes. This patient was admitted January 8th, 1830, being the third day of eruption. Discharged cured January 15th. Duration in hospital eight days.

CASE 2.—James Wright, æt. 20, was vaccinated at Rye, Sussex, twelve years ago. No perceptible cicatrix. Varicella variolodes. Admitted January 12. Discharged January 19th. Eight days in hospital.

CASE 3.—Mary Barker, æt. 16, vaccinated two years ago in the country. No perceptible cicatrix. Varicella variolodes. Admitted February 11. Discharged February 18th. Eight days in hospital.

CASE 4.—John Hubberfield, æt. 11, vaccinated at Bath when five years of age. One good cicatrix. This boy came from a house in Somers' Town, where small-pox was raging. The eruptive fever was very severe.

There were, however, not more than twelve minute pustules on the face, maturing on the fourth day\*. Admitted March 4. Discharged March 16th.

CASE 5.—James Wiles, æt. 19, says he was vaccinated at the small-pox hospital when young. I did not succeed in tracing the name, but he has three good scars, arranged in the mode usually practised at the hospital at that period. Varicella variolodes. Admitted March 8th. Discharged March 16th.

CASE 6.—Charles White, æt. 21, vaccinated in Hampshire when young. Has one good cicatrix. Varicella variolodes, but with great general debility and irritable stomach. Admitted March 28. Discharged April 5. Still weak.

CASE 7.—John Town, æt. 23, vaccinated at Yatly, in Hampshire, when young. One small scar on the arm. Has small-pox, of the distinct sort, well characterized for the first five days, but subsiding rapidly. Admitted February 17. Discharged February 25. Duration in hospital nine days.

CASE 8. John Steel, æt. 20, reports that he was vaccinated at a village, near Ipswich, when young. No cicatrix is discernible upon the arm. Small-pox of the distinct sort, but modified. Admitted February 3. Discharged February 19. Seventeen days in hospital.

CASE 9.—Joseph Betts, æt. 20, vaccinated at Bungay, in Suffolk, when young. One good cicatrix is to be perceived. Small-pox distinct, but modified. Admitted January 5. Discharged Jan. 19. Fifteen days in hospital.

CASE 10.—William Barnham, æt. 19, vaccinated by Mr. Stow, at Buckingham, when an infant. One perfect cicatrix; small-pox, semiconfluent, threatening to be severe, but modified in its progress. Admitted March 31. Now (April 9) convalescent, and fit to be discharged.

CASE 11.—William Donaldson, æt. 22, vaccinated at Arbroath, in Scotland, when young. His arm shews one excellent cicatrix. Small-pox confluent, but modified. A severe attack of ophthalmia took place during the fever of maturation. Admitted March 23. Discharged cured April 5. Duration in hospital 14 days.

CASE 12.—James Cox, æt. 23, was vaccinated in Sussex when young. There is one good scar on the arm. Has small-pox, of the confluent kind, which, however, matured kindly. Admitted March 24. Is now (April 9th) convalescent, and fit to be discharged.

CASE 13.—E. S. æt. 18, vaccinated at East Grinstead, when a year and a half old,

\* This is the case alluded to in the London Medical Gazette, vol. v. page 795. (Proceedings of Westminster Medical Society, Saturday, March 6.)

by Mr. Collins, surgeon. Two excellent scars are observable upon the arm. The vaccination in this boy was considered so fine that the children of — Esq. a magistrate of the county, were vaccinated from him\*. Small-pox very confluent, and for several days threatening danger. No secondary fever, however, took place, and the convalescence was not interrupted by a single bad symptom. Admitted March 23. Is to be discharged this day (April 9th).

CASE 14.—Edward Shaw, æt. 15, reports that he was vaccinated in Hertfordshire when young. No cicatrix, however, can be detected. Small-pox, of the confluent kind, but maturing rapidly and kindly. Admitted January 8. Discharged January 22. Fifteen days in hospital.

CASE 15.—William Grieve, æt. 22, vaccinated in Edinburgh when young. One cicatrix on the arm, not indented deeply. Small-pox, with a copious semi-confluent eruption, running its ordinary course. Convalescence rapid. Admitted January 17. Discharged January 29. Duration in hospital 13 days.

CASE 16.—Louisa Crawley, aged 17, reports that she was vaccinated in this hospital when young. Is one of a family of sixteen, all of whom have been vaccinated here. I cannot find her name in the register book. Her arm exhibits three good cicatrices. Small-pox, of the confluent kind, maturing on the seventh day. Her constitution being weak, suffered severely under the attack. Convalescence very tedious. Admitted January 11. Discharged February 18. Duration in hospital nearly six weeks.

CASE 17.—Mary Ann Huson, ten years of age. This girl was vaccinated at a general parish vaccination when an infant, by — Esq. a surgeon at Hatfield. Two small papulæ appeared on the arm, which the mother felt assured would "never stand." No cicatrix remained. Small-pox of the semi-confluent kind, exceedingly severe, followed by tedious boils and abscesses, and great constitutional debility. Admitted January 22. Discharged February 26, still in a very weak state†. (Has since recovered perfectly).

CASE 18.—Mercey Bowen, æt. 23, vaccinated at a village near Ipswich, twenty years ago, by the regular doctor of the place, who told the family if ever she took small-pox afterwards "he would attend her for nothing." Has one good cicatrix. Small-pox of the semi-confluent kind, very severe at first but maturing kindly. Admitted January 26. Discharged February 16. Stay in hospital three weeks.

\* These and other particulars were communicated in a letter from the young man's mother, received about ten days ago.

† In this case the vaccination was avowedly imperfect. The case is introduced here, however, to shew the necessity of careful superintendence on the part of country vaccinators.

CASE 19.—John Place, æt. 16, was vaccinated, when young, in London, but it is not known where or by whom. One good scar on the arm. Small-pox confluent, severe, unmodified, followed by great debility. Admitted February 13. Discharged (still weak) March 26.

CASE 20.—Charles Clow, æt. 15, has always been given to understand that he was vaccinated at Wickermarket when young. No cicatrix, however, is perceptible. Small-pox confluent and severe, but without secondary fever. Admitted February 17. Discharged cured March 16.

CASE 21.—Harriet Hyatt, æt. 21, was vaccinated in Sussex at seven years of age. Two superficial cicatrices are apparent. Small-pox of the distinct kind, but very much modified in its aspect. Ulcerated sore throat, with slight scarlet eruption upon the arms and breast came on a few days after admission, and proved extremely severe. Leeches to the throat, and purgatives, proved of no service. Under the use of decoctum cinchonæ, with aromatic confection, and a liberal allowance of brandy, she eventually recovered, but for several days she was in imminent danger. Admitted February 26. Discharged March 23.

CASE 22.—Francis Howland, æt. 26, was vaccinated at Sittingbourne, in Kent, when six weeks old. One scar is to be seen upon the arm. Small-pox confluent, laryngeal, unmodified, followed by extreme debility. Admitted February 26. Discharged quite well April 6.

CASE 23.—Elizabeth Skoltock, æt. 26, was vaccinated at twelve years of age in Shropshire. Remembers the circumstance perfectly. Says that the arm rose very well. There is one good cicatrix to be perceived. She caught small-pox by attending a servant in the same family having varicella variolodes, under the care of John Nussey, Esq. The disorder proved, in this case, confluent and severe, but without secondary fever. Admitted March 6. Discharged March 23.

CASE 24.—James Pratt, æt. 30, admitted January 14th. Reports, that in 1805 he was vaccinated at a parish vaccination in Suffolk, by a regular practitioner. Understands he had the measles at the same time. No cicatrix is perceptible. In all probability the vaccination failed. He had the confluent disease, of which he died January 21, the eighth day of eruption.

CASE 25.—Joseph Rayner, æt. 22, admitted January 17th. Was regularly vaccinated by Mr. —, when young, at Great Waltham, in Essex. His brothers, who came to see him during his illness, and whom I revaccinated, informed me that his arm inflamed greatly. No cicatrix is discernible, but this may arise from the copiousness of the eruption. The disease proved very severe, with laryngeal complication,

and he died January 22, the eighth day of eruption.

Besides the cases now detailed, the following eight reported their having been cut for the cow-pock at some former period, ineffectually: James Shillingford, John Palmer, Elizabeth Barnes, William Cleland, Thomas Taylor, Thomas Cass, Jacob Draper, James Drover.

Total of admission into the Small-pox Hospital between the 1st January and 1st April, 1830, 82, of whom died 19.

### HOSPITAL SHIP GRAMPUS.

To the Editor of the *London Medical Gazette*.

SIR,

You will oblige me by inserting the accompanying case in an early number of the *Medical Gazette*.

I am, Sir,  
Your most obedient servant,  
J. Y. THORBURN.

#### *Case of Priapism requiring Incisions.*

Providence Smith, æt. 23, a tall and powerful Irishman, admitted under the care of Mr. Thorburn, Feb. 27th, about noon. Countenance indicative of extreme suffering from an erection of the penis, which is firmly and equally distended; free from heat or redness; pain most severe at the corona glandis; his urine scanty, and passes with great pain. Pains in the loins; pulse natural; tongue white, and complains of thirst; bowels constipated; restless at night.

Eighteen days ago considered himself troubled with worms, to remove which he eat at once nine heads of East Indian garlic. He became soon afterwards affected with febrile symptoms; and the same evening with an erection, which continued until 2 P.M. the next day. It returned every night, and subsided in the day until about eleven days ago, since which it has been permanent.

R Ol. Ricini, ʒj. Ol. Tereb. ʒss. fiat haust. stat. sum. Balneum Calidum. V. S. ad ʒxvj. R Opii. gr. ij. G. Camph. gr. x. fiat bolus.

In the evening—

Ol. Ricini, ʒij. cum. Ol. Croton, gtts. iv. at separate times. Eighteen leeches to the penis. Balm. Tepid. R Træ. Opii ʒj. Aquæ ʒvj. fiat fots constanter applicandus.

Feb. 28th.—Temporary relief from the leeches and the bath. In the course of the night dark clayey scybala evacuated with great pain. Blood taken yesterday chiefly serum, not buffed or cupped.

Hyd. Submur. ʒj.

4 P.M.—Left side of the penis was punctured, and temporary relaxation and abatement of pain followed,

R Hyd. Submur. gr. v. Pulv. Jalap. ʒj. fiat bolus statim sumendus et postea. Infusi. Sennæ, c. Sulph. Magn. ʒij.

9 P.M.—Bowels not moved. The relief from puncturing continued only for ten or twenty minutes; is now writhing with pain. Pulse weak; tongue furred. Refuses a repetition of the puncturing, or the administration of an enema.

R Ol. Ricini, ʒj. Ol. Tigllii. gtts. iv. statim.

March 1st.—Copious watery evacuation last night. Priapism continues. An incision made into the left corpus cavernosum, half an inch in length, through which flowed a considerable quantity of thick venous blood. A smaller incision was also made. The relaxation of the penis, and the relief from pain, was immediate; indeed the penis fell, as the patient emphatically describes it, with a “bob.”

R Cal. gr. xx. Opii gr. iij. fiat bolus stat. sumendus. Cataplasma to penis.

2d.—No return of priapism; some swelling of the prepuce; mouth affected by the calomel.

5th.—Whole of the penis much swelled, but no pain or priapism.

Hirud. xij.—Lot. frigid.

March 9th.—Burrowing abscesses in corpora cavernosa, especially the left, in which it extends for two inches along the penis. Directory introduced, and a counter opening made with a bistoury, after which an injection of nitrate of silver (gr. v. ad ʒj.) was thrown in, and lint inserted.

14th.—Pressure applied to penis by means of adhesive plaister.

17th.—Penis free from swelling; no discharge from the openings.

19th.—Discharged at his own request; a slight induration of the left corpus cavernosum being the only vestige of the disease.

### EDINBURGH ROYAL INFIRMARY.

*Amputation below the Knee—Secondary Hæmorrhage—Ligature of the Femoral Artery.*

NORMAN McLEAN, æt. 28, admitted under the care of Mr. Liston, Nov. 9th.

About four years ago sustained a severe sprain of the left ankle, which is of a livid color and much swollen, with several fistulous openings communicating with the joint. By the introduction of the probe, the bones are felt denuded, rough, and softened. The motion of the joint is very imperfect,



and attended with slight pain. Several small pieces of bone have at different periods been discharged. Pulse above 90, and of good strength; no diarrhœa, or night sweats; bowels regular; appetite good.

A variety of treatment had been pursued with the view of saving the limb, but the disease continued to advance, and, according to the patient's statement, his health has been considerably impaired. Had been in the hospital a twelvemonth previously, and then refused to submit to amputation.

11th.—To-day the limb was removed below the knee. The incision was commenced at the inner side of the tibia, and continued in a semilunar form to the outer part of the fibula; transfexion was then made, and a posterior muscular flap formed; the integuments on the fore part of the tibia were dissected upwards, so as to form a small anterior flap. The tibia was sawn through immediately below its anterior tubercle, and the head of the fibula was disarticulated. Three vessels, the popliteal and two gastrocnemial, were secured, and the flaps retained by stitches.

Mr. Liston stated that, in hospital practice, he prefers the amputation immediately below the knee to that at the middle of the leg; as, in the former case, the limb is of much greater use to the patient, he being able to follow his occupation with greater ease and security, and at less expense, by resting on the knee, than by using the artificial limb applied to the middle of the leg. He also prefers the amputation above described to the circular operation commonly practised at this point. In the former, much fewer vessels require to be secured, adhesion is in general more speedy, the end of the bone is better supported, and there is less chance of sloughing. He has lately made comparative trial of both operations in a considerable number of cases in the hospital.

The cartilages of the joint were almost entirely absorbed, and the denuded surfaces of the bones were in a carious condition. The bones of the tarsus were much softened and extensively ulcerated.

13th.—The stump has been dressed and looks well. Bowels rather constipated.

Habeat Pil. Colocynth. gr. ij. c. Pil. Hydrarg. gr. j. and an anodyne draught in the evening.

The patient seemed to be doing remarkably well till the morning of the 16th, when slight hæmorrhage occurred from the stump; cold applications were employed: the oozing, however, continued, and a considerable quantity of coagulated blood was removed from the wound, which was then stuffed with lint. In the evening, the hæmorrhage became more profuse, and the superficial femoral artery was secured by Mr. Liston, at the usual situation in the thigh. The bleed-

ing was immediately arrested. On removing the stitches, the flaps were found separated from each other by coagulated blood, and no adhesion had taken place.

18th.—Slept little during the night; pulse natural; bowels slow.

Habeat Ol. Ricini ʒj.

20th.—The process of granulation is advancing rapidly in the stump, which is almost universally adherent. The wound in the thigh looks well; pulse natural. Ordered wine and nourishing food.

29th.—The ligature which was placed on the femoral artery, has come away; stump healing rapidly; health much improved.

13th Dec.—The patient has been out of bed for several days.

He left the hospital soon after.

## GUY'S HOSPITAL.

### *Case of Sloughing on Dorsum of Foot.*

WILLIAM FAIRBROTHER, 37 years of age, was admitted under Mr. Key, 24th March, 1830, with a large sloughy ulcer on the dorsum of right foot, extending from the roots of the toes to about two inches or more above the outer ankle, and occupying nearly the whole breadth of the foot. He states that this slough commenced ten days ago, in a small dark-coloured vesicle, at the root of great toe. This burst, and has gone on increasing to its present extent. The history of his ailments are as follows:—

About seven months ago he had an attack in his chest, which was termed, by the medical man who attended him, spasm of the heart, and inflammation of the lungs. From this he partially recovered, after copious depletion, &c. in about two months, but has never been entirely restored to his former health. He went about his ordinary avocations till three months ago, when his feet began to swell, his breathing became short and difficult, he felt fatigued on the slightest exertion, and was not able to walk up stairs without labour; his extremities became cold and much weakened, and upon this swelled state of the feet supervened the slough which is the immediate subject of his admission. He has had more or less of cough during the last seven months, but has never spit blood. Has been subject to gout in his feet.

His employment formerly was that of private secretary to the late Mr. Sheridan, with whom, and subsequently with others, he has travelled a good deal; and lately (for the last three or four years) he has been clerk to a printer.

It appears that he has been a very irregularly living man; he has drank freely of spirits, and been much addicted to venereal

indulgences. Notwithstanding which, his health has been very good till this illness.

March 25th.—His present state is as follows. Sloughy pieces of cellular membrane, &c. are loosely hanging at various parts of the sore, close around which the limb is rather warm, but a little further off cold. Pulse extremely feeble and frequent; tongue fissured, and somewhat dry and red; surface of the body nearly cold generally. Cannot rise in bed without increased distress of breathing. Heart beats strongly, therein being at variance with the pulse. Carotid arteries are seen pulsating, and especially on the right side, where the superficial veins of the neck are swollen and turgid. Has a cough, with free expectoration of mucus, slightly tinged with blood. Voice is hollow. He is of a pale dingy complexion, and is much emaciated and enfeebled.

Ordered, Cataplasma Cerevisiæ pedi.

Infus. Rosæ C. p. r. n.

Extr. Hyoscyami, gr. v. o. n. et subinde.

27th.—Chest examined by means of the stethoscope, &c. It was pretty resonant throughout, except a little dulness over the right scapula, and over the region of the heart extensively. Breathing murmur was also evident every where, save at those parts. The heart's beat was very diffuse, extending over the greater part of left chest, and towards the sternum. No peculiar râle attended it, nor was there any tumult in its action. There was a lengthened contraction of the ventricle, followed by an ordinary auricular beat. His health is nearly the same. He gets no sleep at night, his appetite is very bad, and spirits much depressed. A considerable quantity of slough came away in the poultice. The sore looks flabby, and without granulations. It is not painful.

29th.—To-day his chest was again examined, and nearly the same results obtained. There is a good deal of crepitation in various parts of the lungs generally, chiefly on the middle and lower part of right lung. The pulse is very feeble. Pain in right side of chest severe, and increased on inspiration. Cannot sleep at all. Voice much weaker, and his general debility is many degrees worse.

Ordered, Vini Rubri, ℥viij. quotidie, and a Mutton Chop. — Emplas. Lyttæ Thoraci.

30th.—Cough is much worse, and a good deal of bloody mucus expectorated. Appears in great distress. Bowels are opened about twice daily; feels no appetite at all for food.

31st.—Cough still worse. Voice no stronger than a whisper. Articulates with much difficulty, being interrupted by cough and difficult breathing. The bloody mucus was increased by the very first glass of wine

taken, which has therefore been discontinued. Pulse very small, quick, and feeble. Tongue moister a little, but fissured laterally. Sore looks better. He slept for a short time last night, and in his own opinion he is in less pain than he was yesterday.

April 1st.—To-day each symptom, as above, is decidedly increased, and the expression of his countenance more worn. To-day Dr. Hodgkin detected the bruit de rape on the contraction of the left ventricle, caused probably by clots fringing the valves, and therefore it may only be temporary. Dr. H. did not notice it on former examinations. There is also, on lower side of left lung, on laying the hand over the spot, a sort of emphysematous crepitation, the cause of which cannot readily be explained.

2d.—He says he feels better, but he certainly looks as if he were sinking. No pulse can be felt at the wrist. Action of the heart not tumultuous, but diffused. Cough is very distressing; he brings up abundance of mucus, strongly impregnated with blood.

He went on thus till night; became slightly delirious, muttered and rambled a good deal, then became quiet, and at eight o'clock the next morning (3d April) he died.

*Post-mortem Inspection, 53 hours after death.*—The body externally offered nothing particular.

*Chest.*—So soon as the sternum had been raised up, the pericardium was seen, nearly double its ordinary size, occupying a good portion of the left side, and extending across to the right. The side of the left lung was adherent, at the lower part, to the pleura of the ribs, by means of some strong, old, vascular adhesions, just over the place where crepitation had been felt by the hand on the 1st April. Within the lower part of this lung there were two or three portions in a state of apoplexy, gorged with blood, and easily broken down under the fingers. In the superior part were several spots of tubercular matter, contained in tough capsules, and with surrounding hardness of the lung.

On the pleura of right lung, and especially at the lower part, between the lung and diaphragm, were some patches of very recent lymph, indicative of pleuritis. At the upper part, as on the left side, were several tubercular bodies, with a puckering round some of them, as if they had been contracted cavities. There was not much fluid in either pleura.

The heart was enlarged to nearly twice its natural size, both in thickness of substance and capacity of cavities. On its exterior the coronary vessels were seen beautifully filled. Both the cardiac and reflected layers of the pericardium were rough, and had the scabrous feel of old inflammation. Strings of recent effusion, too, were seen ramifying with the coronary vessels.

The mitral and tricuspid valves were

sound. In the right auricle there was a large lump of adhesive matter, slightly adherent to the auricle. This mass had an external nearly membranous texture, and appeared a little vascular. It enclosed in its centre some coagulated blood. The aortic valves nearly sound. There was a very slight roughness at two of the corpora sesamoidea.

In the cavity of the pericardium there were about three ounces of fluid.

*Abdomen.*—Liver healthy. Spleen somewhat pale, and mottled within. Stomach contained about four ounces of coffee-coloured fluid; its inner coat was every where red and granular. Also, within the stomach, about the centre of the smaller curvature, there was an ulcer as large as a shilling, irregular in shape; its edges and base were hard and well defined; its surface excavated and covered with a scrofulous-looking matter, such as is met with in ordinary scrofulous sores. [N.B. The patient never had vomiting or any other symptom which called attention to the stomach peculiarly.] The small intestines were turgid with blood, and the veins on the mesentery leading from them were full.

Kidneys small, irregular, rough, and contracted, and very much mottled. It had not been ascertained whether the urine was coagulable.

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[The following interesting case, with the post-mortem examination, is taken from the clinical case-book: the patient was under the care of Dr. Bright.]

#### *Tubercles in the Brain.*

Amelia Humphreys, æt. 11, a delicate but healthy child, until five months ago, when she had a fit at school, from which she has never completely recovered. (The probable cause of the fit, and the particulars attending it, cannot be ascertained, either from the child herself or her friends.) She was leeches, blistered in the head, and had so far got the better of the attack that on coming home a month after she was able to walk with but little assistance. She relapsed, however, in a fortnight, and fell into the same helpless state in which she is at present.

Nov. 4th.—She has lost all power of moving the left leg, which is stiff, cold, and shrunken, the foot being drawn inwards. The right leg is similarly affected, but in a less degree; they are sensible to touch, and she cries when they are pinched. She still retains the use of the upper extremities, but in an imperfect degree; there is spasmodic action of the right arm occasionally, with shaking and trembling; the urine and fæces are passed involuntarily; the aspect indicates much suffering and cerebral irritation. She complains of pain in her head, and screams violently; is fretful, restless, and

irritable. The pupils are dilated; the veins of head prominent; the cheeks flushed; pulse rapid, with slight cough and acceleration of breathing. She has not been drowsy nor delirious during her illness, nor her intellects in any way disordered. Two of same family have died of hydrocephalus.

Abrod. Capillitium. Embroc. comm. capiti raso diligenter appl.

Pil. Galb. C. et pil. Alces c. Myrrha, a.a. gr. v. o.n.

5th.—Fiat setaceum nuchæ. P.

7th.—Dry hacking cough, preventing sleep; fæces passed in bed; less dilatation of pupils, and no pain in head.

M. Mucilag. ʒiv. Vin. Ipecac. ʒij. Syrup. Simp. ʒss. ft. linctus, p. r. n. P.

(The mother stated to-day that a fortnight before her illness the child had been observed by her playmates to be dull and heavy).

8th.—Rambled during the night, and does not appear so sensible when spoken to. This morning complains at one time of her head, at another of her foot, as being the seat of pain. Cough troublesome, liquid and frequent dejections passed involuntarily. Pulse 140, and small; appetite voracious.

Hydr. c. cretæ, gr. ij. bis die. Inf. Cascarrill. c. Soda, t. d.

9th.—More restless and fretful during the night; screaming out, and referring pain to head. Otherwise the same. Pulse 160 P.

10th.—Cough unabated; thirst considerable; pupils of natural size; stools, of proper colour and consistence, passed in bed, as well as urine: in other respects the same.

11th.—The belly exceedingly swollen last night; the breathing shorter and more laborious, effected principally by action of diaphragm; hiccup came on early in the morning, and has since subsided; the respiration and pulse now more rapid; they are this morning 40 and 160 respectively. The irritable habit and fretfulness are subsided, and there has supervened more or less of oppression; (not coma or delirium). The appetite, which was great, is almost gone; the countenance pale; but cheeks are suffused from time to time with a purple flush. The abdomen is rather tumid; the fæces always passed involuntarily.

The right arm is motionless, and firmly contracted, stiff and inflexible; the eyes directed to the left; and she never moves them, either when spoken to, or when requested. There was observed after taking nourishment this day a violent spasmodic action of the muscles of the left side of the face.

9 o'clock P.M.—Comatose and insensible; the eye-balls, which were set before, are now rolling continually; the mouth is drawn to the left side, not permanently but spasmodi-



cally; with shivering of mouth, which is firmly closed. Pulse 176, rapid, but not fluttering or faltering. The extremities and head warm; hiccough renewed occasionally; abdomen more tumid; quivering and twitching of muscles of extremities; has taken nothing since 5 o'clock.

12th.—Dissolution imminent; the breathing sonorous, with mucous tracheal rattle; eyes dim and set; pupils contracted; pulse flags during inspiration, and then beats three or four hurried strokes during expiration. Forehead and extremities very warm.

Hirud. vj. temp.

Expired at half-past 4 in the afternoon.

*Examination after Death.*—The body was rather emaciated, and generally pale; nothing requiring notice was observed either externally to the cranium or between it and the dura mater. On raising the dura mater, a partial but close adhesion was observed between the two opposed surfaces of the arachnoid over the superior part of the middle lobe, about an inch to the left of the longitudinal sinus. The arachnoid was elsewhere naturally thin and transparent, and the pia mater was generally little injected. Beneath these membranes, and directly seen through them, there was an appearance resembling scattered collections of yellow pus, having in most instances a nearly circular figure, not exceeding a third of an inch in diameter; one or two of these patches were of a more irregular figure. On examination, they proved to consist, not of pus, but of tuberculous matter, imbedded in the cortical part of the brain. Sections of the brain exhibited similar tubercles in the corticle substance in other parts of the brain, as in the depressions between the convolutions. They were particularly numerous, although of small size, in that part of the hemispheres which is in contact with the falx, behind the corpus callosum. The adhesions of the arachnoid corresponded with one of these tubercles above-mentioned. On the under surface of the brain, three of these tubercles were observed on the right anterior lobe, and two on the posterior. On the left side, was one on the anterior part of the middle lobe, not far from the tractus opticus. There were three or four on the upper and under surfaces of the cerebellum; and there were several in the cineritious matter of the arbor vitæ, not visible externally; and one of large size in the corpus rhomboideum. There was likewise one in the cineritious matter within the corpus olivare. The medullary substance appeared to be universally exempt from such deposits, except that one, about the size of a hemp-seed, in the left hemisphere, near the corpus striatum, and so situated that it could not be decided to what substance it belonged. There was increased

vascularity, to a limited extent, around all of these tubercles; none of them were in a state of softening. The medullary substance in the posterior part of the left middle lobe, was somewhat softened; that of the posterior lobe on the right side less so. In the anterior lobe it was slightly and partially indurated. The medulla spinalis was minutely inspected, but offered nothing preternatural, either in the colour or consistence of either cineritious or medullary matter. The membranes were likewise healthy; but it would seem that the arachnoid and pia mater very tightly embraced the medulla, for when slight incisions were made through them, just sufficiently to wound the medulla, a portion of this protruded, so as to occasion a considerable elevation.

*Chest.*—The opposed surfaces of the right pleura were firmly adherent, by means of a vascular cellular membrane, which did not appear to be of recent formation. On the left side, the pleuritic adhesions were few and partial. Both lungs were thickly sprinkled with miliary tubercles, in which opacity had commenced; they were most numerous in the upper lobes.

*Abdomen.*—The most remarkable morbid appearances were the very general peritoneal adhesions, in the form of membranes and bridles. There were also a few adhesions between the diaphragm and liver. The omentum was not drawn up and corrugated, but remained spread over the intestines and adhering to them, and more slightly to the parietes. Many of the abdominal viscera, and especially the intestines, were thickly sprinkled with miliary tubercles, which were situated in the false membranes as well as under the peritoneum. Many of these tubercles were surrounded by a dark deposit in the adjoining structure. The liver was healthy and free from tubercles, but pale. There were a few small tubercles in the spleen, which was of moderate size, and rather firm.

#### BOOKS RECEIVED FOR REVIEW.

The Nervous System of the Human Body, embracing the Papers delivered to the Royal Society on the subject of the Nerves. By Charles Bell, F.R.S.

An Introductory Lecture to the Theory and Practice of Midwifery; being an Historical Account of that subject. By Thomas Greening, M.D. late Physician to the City of London Lying-In Charity, &c.

#### NOTICES.

“An Inquirer.”—We are not able to give the information; probably it might be obtained at Apothecaries’ Hall.

“Quæsitör.”—The new Pharmacopœia is not expected to be ready for a year to come.

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# THE LONDON MEDICAL GAZETTE,

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SATURDAY, APRIL 24, 1830.

## LECTURES ON SURGERY,

*Delivered at St. Bartholomew's Hospital,*

BY WILLIAM LAWRENCE, F.R.S.

— *from* 73.

### LECTURE XXXII.

#### CELLULAR SYSTEM—(*Continued.*)

*Emphysema—Tumors—Sarcoma, Adipose, Pancreatic, Cystic, Mammary, Tuberculated.*

EMPHYSEMA, gentlemen, is a Greek word, which means *inflation*, or *blowing up*; and in its medical technical sense it denotes the presence of air in the cellular texture of the body. Air may gain admission into the cellular texture in consequence of a wound in the lungs; generally from such a wound as is produced by the fracture of the ribs, or in consequence of a breach of surface of the lungs, produced by the bursting of an abscess. It has been said sometimes to arise in consequence of the efforts made by a female in parturition, and that it has happened from the reduction of a luxation of the arm, of old standing. In some rare instances emphysema has occurred spontaneously—that is, from some internal unknown cause; and we find it taking place in consequence of the decomposition of the textures of the body which occurs in mortification. The mere presence of air in the cellular texture of the body need not give you any anxiety; but the causes that give rise to its admission may be more or less important. The swelling that is produced by the presence of air is a soft tumefaction; the air gives way under the pressure of the finger, and escapes into the contiguous cells, the displacement of the air being attended with a peculiar sense of crackling. If the distention proceeded to so considerable a degree as to become troublesome on that account, all that will be necessary for you to do is to make a small puncture with a lancet through the skin, so

as to let out the air. When, however, the cause which produces the introduction of air into the cellular texture is at an end, the air that has been already introduced gradually disperses—probably it is absorbed, and no more inconvenience is experienced.

#### *Tumors.*

The cellular texture of the body is frequently the seat of new productions—that is, of the deposition of new matter, forming an enlargement of the part in which it takes place; or, in technical language, constituting *Tumors*. Now, as the word tumor merely means swelling, all kinds of enlargement come under the term, etymologically considered. Thus various states of the different organs of the body, very dissimilar from each other, are attended with enlargement, or swelling; and therefore, so far, have a claim to be considered under the head of tumor. The word tumor, in fact, merely denotes the circumstance of enlargement, or external projection; and were we to arrange diseases according to circumstances of this kind, which do not arise out of the essential nature of the affection, we should bring together a very heterogeneous assemblage of affections, not allied to each other in any respect, except this single point of producing enlargement in bulk. I have already had occasion to mention what a strange collection of diseases is found under the head *tumores* of Cullen; and in the Treatise on Surgical Diseases, by Baron Boyer, you will find an equally ill sorted assemblage. Under the head of tumors he treats of erysipelas, phlegmon, boil, carbuncle; of malignant pustules, of aneurisms, or those tumors produced by the dilatation of blood vessels, aneurism by anastomosis, and so forth; of schirrus, of cancer, and of œdema.

Mr. Abernethy wrote an essay on the classification of tumors, in which he very judiciously proposed to characterise and distinguish them, according to the differences of their anatomical structure; and he likewise proposed to restrict the term tumor to those

swellings which consist of a new production, which constituted no part of the original composition of the body. Thus we exclude from our idea of the word tumor, simple enlargement of parts, dilatation of tubular and hollow parts in consequence of the fluids which they naturally contain, the displacement of parts, such as in hernia, where an organ belonging to one situation is preternaturally thrust into another:—all these are got rid of, and we restrict the term to a very different class of affections—those enlargements of a part in which there are new productions that did not constitute any part of the original composition of the body.

Now, definition is not a very easy thing; and with respect to the one that I have just quoted to you, we must observe that it wants a little amendment, because as it now stands it includes the enlargement of the uterus in a state of pregnancy. When the uterus becomes impregnated, there is a new production, which did not constitute an original part of the body. Thus the impregnated uterus literally comes under Mr. Abernethy's definition of a tumor, though he did not mean that it should. It will be necessary, therefore, to modify this definition, so as to make it include simply those new productions which are deposited in the interior, or in the texture of any organ: then we escape these objections. Now unfortunately, in the very same paragraph in which Mr. Abernethy, in his Essay on Tumors, gives this definition, which I think useful as restricting the word tumor to a definite class of affections, he extends it so as to include others of a very dissimilar nature—that is, he includes under it the enlargement of parts, such as the glands—enlargements which are produced by the development of something in the texture of the part, and also those enlargements in which the original structure of the gland is entirely removed, and another substituted instead—that is, enlargement of the glands from a change of structure of the part. Now these are two distinct kinds of affection, and they cannot be made the subject of any common observation as to their origin, their increase, or their mode of treatment, and therefore I think they ought to be kept carefully distinct from each other.

It is true that some new productions may take place, such as either in the cellular texture of the body generally, or as depositions into the texture of the glands and other parts. This is the case at all events with fungus hæmatodes, and perhaps with carcinoma; and with respect to the former (that is, fungus hæmatodes), we find that when it is seated in a gland sometimes it occurs as a distinct deposition, we might say foreign to the proper substance of the gland—that is, completely defined and restricted within one certain part, and not disseminated

through the natural texture of the gland. In other instances we find that a general change takes place in the substance of the gland, by which the natural seems to be gradually converted into the fungoid structure. In these respects the two classes of affection approximate towards each other. We find that one of the same diseased formations may occur either in the cellular texture of one part of the body as a tumor, or an entirely new production; or it may take place as a similar entirely new production in any gland; or it may appear as a gradual conversion of the structure of the gland into its own peculiar character. Thus, as you see in other cases, we do not find marked lines of distinction between the various changes that take place in the body; but we find a gradual transition from the one to the other, with no very obvious or marked boundaries between them. I still think we ought to keep in mind the distinction between this new production or deposit into the cellular texture of the body, and those alterations of structure which occur in the various glands, by which the substance of the gland is gradually converted into a new kind of texture. With respect to the former—that is, the new production into the cellular texture of the body, which constitutes tumors—we may say generally, that we are incapable of acting on, or removing them, by any general or local measures whatever: with respect to enlargements or alterations of structure, attended with tumefaction of the glands, we generally combat them with more or less success by various measures.

Our next point of inquiry, then, is into the origin and modes of increase of the new or accidental productions. You will find three kinds of explanation given of the mode in which tumors are originally formed. In the *first* place, it is stated that blood is shed into a part—that it coagulates—that vessels shoot into the coagulum of blood, and organize it; and that the coagulum when thus organized may assume subsequently various kinds of structure, according to circumstances, of which we are ignorant. *Secondly*, It is said that coagulable lymph is deposited in the part—that vessels shoot into it; and that thus it becomes a new production, capable of assuming various characters of structure. *Thirdly*, It is said that tumors owe their origin to chronic inflammation, and they are enumerated as one of the results of that action. Now, although these three explanations are essentially different from each other, and therefore inconsistent, I think you will find in the essay of Mr. Abernethy, that in various parts he adopts each of them. We generally find when various modes of explaining any phenomenon of the body exist, that in point of fact we do not really know how it takes place; because, if we knew the precise way in which



the thing was accomplished, we should find that it took place in one mode, and that we did not want various ways of explaining it. Three explanations of the formation of tumors are more than enough; we only want to get at one. Now, in reference to the three modes of explanation that I have just mentioned, I can only state that my own opinion is, that tumors are not formed in any of these ways.

In the first place, we do not find that the formation of tumors is preceded by the effusion of blood into the part; we see nothing like that in investigating their history. On the other hand, we see that when effusion of blood takes place into the texture of a part, ecchymosis follows, either in a diffused form in the cellular texture, or by a collection of blood in one particular part, and that no tumor is the consequence of such occurrence. The blood thus effused is absorbed and removed from the part, and we do not see that tumors take place in consequence of it. In the same way effusion of coagulated lymph is occasionally occurring in consequence of inflammation, and the effusion is absorbed when the inflammation subsides; but the lymph is not organized and formed into a tumor—nothing of that sort takes place. If, by chronic inflammation, we mean that state of a part in which there is a recognisable degree of redness, heat, and swelling, we certainly observe no such phenomena preceding the development of tumors. Tumors take place insensibly; they often arrive at a considerable size before persons are aware of their existence, so that we see none of those phenomena preceding their formation which belong to our idea of chronic inflammation; in fact, if either of these explanations were correct, we should find that tumors would go through a certain stage; that in their early condition they would be seen in one stage of development, and that this development would be gradually unfolded, so that they would assume a different character according to their age; but we see nothing like this. On the contrary, if it be a fatty tumor, though it may not be larger than the end of the finger, it possesses all the characters of fat just as perfectly developed as if it were an enormous lump; and so we may say of every other kind of tumor. You do not observe them going through different stages; you do not see them existing as coagulated blood, or coagulable lymph, and then gradually assuming the appearance of a tumor of any kind; but from the first moment you recognise them, they are as perfect, though small in size, as at any subsequent period. I believe then, at last, that surgeons must be compelled to say, as the unlearned do, that tumors come of themselves—that is, the causes and mode of their original production

are really unknown; we cannot tell how they occur.

When the tumor is produced, we find that it derives its supply of blood from the vessels belonging to the part in which it has occurred; and we find that the vessels enter into it at various points of its surface. Tumors, however, have a natural tendency to advance towards the surface of the parts in which they take place; they arise towards the skin—they spread in that direction; and thus we find that the largest and most numerous blood vessels are found coming into the tumor at its base. Sometimes there is one considerable vessel, but generally there are a number of vessels entering into the tumor. The tumor gradually increases in the part; it condenses the cellular membrane, and forms it into a kind of capsule, an adventitious covering which surrounds the external surface of the tumor, and marks the boundary between that and the natural texture of the part.

When a tumor is produced, its increase no doubt takes place by the same process of nutrition which produces the regular enlargement of the various organs of the body. This process of nutrition in general, however, is more active in a tumor than in the natural texture that surrounds it. Thus you find tumors increase to a considerable size, often attaining a very great magnitude. This increase, however, is not constant; frequently tumors remain for a long time stationary—they neither increase nor diminish; at other times they grow very rapidly. In the case of some tumors there is a regular increase of size, and there seems to be hardly any limit to the magnitude which they may acquire; no other limit, in fact, except the degree of extension which the skin and the other surrounding soft parts will admit of. In other instances, having attained a certain size, the new production goes into other changes; it causes ulceration, the formation of fungus, sloughing, and so forth. This is the case with those productions which constitute malignant tumors, such as carcinoma, fungus, hæmatodes, and the like.

Those tumors which are more or less of a soft feel and consistence—those which may be called by the general or familiar appellation of fleshy tumors—have been designated by the technical name *Sarcoma*. Sarcoma, therefore, may be deemed equivalent to fleshy tumor—a tumor which is not bony, which is not cartilaginous—one which is not hard.—The first species of tumor which Mr. Abernethy describes, he calls the common vascular or organized sarcoma; and he mentions it as if it were produced by the effusion of coagulable lymph into the texture of the part, and by the subsequent penetration of vessels into the lymph, so as to render it organized. He says that when it has acquired

a certain bulk, the surface will be apt to ulcerate, and the tumor may slough out; and he gives one case that terminated in this way. I cannot say that I am acquainted with any other case of that description. I never saw effusion of lymph into a part organize in this manner. The singular case that Mr. Abernethy mentions seems to have been an accidental tumor; and he does not appear to have met with many instances of it, perhaps hardly enough to found a description of a regular kind of tumor upon it.

I may observe to you generally, that unnatural growths, which constitute tumors, will very frequently correspond in their structure to the parts in which they are produced. Thus, when a tumor is formed in the subcutaneous adipose tissue of the body, it is a mass of fat; when a tumor is observed in that kind of cellular texture which does not contain fat, it is of a cellular structure without fat. Tumors which are formed on the mucous membrane of the various parts of the body, have a mucous surface, and the part precisely corresponds to the mucous texture, such as polypi of the nose. Tumors formed on the cartilaginous ends of bones are cartilaginous; they constitute subsequently the loose cartilages sometimes met with in the joints. Thus we find generally that there is an accordance in the nature of its texture between the new production and the tissue which gives birth to it. This, however, is not essentially the case, because we may have the structure of carcinoma, or fungus hæmatodes, formed in the ordinary adipose and cellular tissues of the body.

Now, we have a kind of ordinary cellular tumor—that is, a tumor developed in the cellular texture where fat is not present; and these tumors grow to a very considerable size, without possessing any thing peculiar in their nature. I shall mention some examples of these tumors.

A very handsome finely-formed woman came to consult me. She looked remarkably healthy, but said she wanted my opinion about a swelling, and that she believed it was a rupture. She did not give me a clear account of it, and I said it was necessary for me to examine it. She consented, and then she turned aside one way and I turned the other, that she might have an opportunity of arranging matters with decency. I thought she was very long in getting this tumor undone, but at last the job was effected. When I turned to look, I expected to see a hernia, or a tumor, about the situation of the groin, perhaps the size of a walnut, or of an egg; but to my utter astonishment I saw, hanging from one of her buttocks, a mass about double the size of my head. I had a drawing made of it [which was here handed round the theatre, and contained a posterior and lateral

view of it]. The tumor was greater in breadth than the transverse measurement of the two buttocks, which, in a well-made woman like this, were not very narrow. When I came to inquire into its history, the lady told me that it had existed for four years; that it had not grown much during the two first years; that it had given her no pain, and that even in its present magnitude it produced no great inconvenience, except what was inseparable from its weight and bulk; but it interfered with no function, and did not even impair any. It seemed that it had commenced at the posterior extremity of the left labium, and had extended gradually towards the buttock, behind the os coccygis. It had a soft feel, and an obscurely lobulated surface. The integuments did not adhere to it, but were quite loose, so that they could be pinched up. The base of the tumor, especially towards the anterior part, was of uncertain extent—that is, I could not tell how far it went inwards beyond the labia pudendi, or towards the cavity of the peritoneum. She said her medical attendant had thought it was a rupture; and this led me to examine whether it was so. I tried to ascertain whether there was any motion communicated to it on coughing, but I could not see whether there was or not. I could not trace satisfactorily the tumor to its base; and I felt rather in doubt respecting its nature, and what ought to be done. I should say that it measured 32 inches in its greatest circumference, and 21 inches at its base. I recommended this lady to call on Mr. Wardrop, and ask his opinion. When we came to converse about it, he said that he thought it might be safely removed, and that this ought to be done. After considering all points in the case, seeing that her health was entire, that no function was affected, and that we could not trace any connexion that it had with any internal part, I determined on removing it. I performed the operation as quickly as I possibly could. There was of course a vast number of vessels bleeding very copiously. I did not stop to tie these, but allowed them to bleed; and by the time I had detached it the lady had lost a large quantity of blood, and was very faint. The tumor was only loosely connected to the glutei muscles, and to those parts to which it had recently extended; but there was a prolongation extending up the labium, toward the vagina. After tracing it upward, I thought it might be a thickening occasioned by the dragging of the tumor, and I cut it through and detached it. I brought the integuments together by eight sutures, and in less than a fortnight she was well enough to go back to the country, the parts being healed. She continued well, and not very long after the complete healing of the wound, she married. She returned to me again in about a year and

a half, in the last stage of pregnancy, and with a considerable reproduction of the tumor. It had acquired about one-third of its original magnitude. I told her she must come to me again after her delivery, which she accordingly did. I then found the tumor so large as to require a second removal, which I accomplished for her about a year and a half ago. On this occasion I traced the tumor very carefully up the labium, in the situation where I had cut it off, and I found a kind of neck ascending into the vagina, which I followed up to the symphysis pubis; and by dragging and drawing the part from that situation, it gave way, and came out pretty entire; so that it seemed to have its origin in that part. The wound speedily healed, and in eight days she was able to go back to the country, and has continued well to the present time. On coming to examine the tumor, and on cutting through it, I could not compare it to any thing except rather a condensed cellular tissue, free from fat, the interstices of which contained a serous or half gelatinous fluid, so that when it was left through the night in a dish, a large quantity of the fluid had gradually exuded from it, and it seemed to be simply that kind of condensed cellular tissue which might be expected to be formed in the tissue which belongs to the labia and the adjacent parts.

There are tumors occurring in the scrotum which proceed to an immense magnitude, distending the scrotum to an enormous size, and involving the integuments of the penis, ending at last in the production of a growth truly monstrous—in the formation of large tumors, that sometimes descend nearly to the ground, and out of one part or other of which the urine flows in an aperture like a navel. These occur principally in hot climates; the East and West Indies, for example; and the growths which are thus produced may amount to sixty or seventy pounds weight, or even still more. I have had no opportunity of examining any of these productions, but I rather think, from the accounts that have been given, that these are tumors of the cellular kind that I have just alluded to.

In the sixth volume of the Medico-Chirurgical Transactions there is an account of a tumor in a negro, which was removed by Dr. Titley; the mass weighed seventy pounds, and the patient did perfectly well. This leads me to say, that enormous as these growths are, and formidable as they appear, they may be very safely removed. Larrey, in his account of his campaigns, mentions having seen several cases of this kind in Egypt. He says that some of the tumors that he saw weighed sixty or seventy pounds; he mentions one in particular that was estimated to weigh one hundred and twenty pounds.

Now the production of these tumors is not simply confined to these hot climates, for we

find that they sometimes take place in our own country. Mr. Liston, in the nineteenth volume of the transactions of the Edinburgh Medical and Chirurgical Society, mentions the case of a youth, about twenty-two years old, who had a tumor, which had existed about ten years. There is a representation of it; and it seems almost doubtful whether the tumor or the body of the individual is the larger. Mr. Liston removed the tumor; and he mentions that the weight of it was forty-four pounds and a half after a good deal of blood and serous fluid had exuded from it. There is a similar case in the second volume of the "Transactions of a society for promoting medical and surgical knowledge," of a Hindoo, with a figure representing the growth.

When these tumors form in the adipose textures of the body, their composition is fatty, and it constitutes what Mr. Abernethy calls *adipose sarcoma: adeps* is the Latin for fat, and merely means fatty tumor. They are called by the French *tumeurs graisseux*. These consist simply of a mass of fat, and are hardly distinguishable from the ordinary fat of the body. They consist of a soft inelastic swelling, unattended with pain, giving no inconvenience unless from their bulk. We generally find that the bases of these tumors are lobulated. You here see an instance, [presenting a preparation]. This is a mass of fat that has been removed, and shews the appearance of the base of the tumor. They form very slowly, and the patients generally are hardly aware of their existence till they have attained some magnitude. The surface is surrounded by a thin white capsule,—the vessels which they receive are not large; they adhere but slightly to the capsule that contains them; so that when you have divided the integument and capsule you can easily turn them out—almost with the finger alone.

Excision is, in fact, the only remedy for one of these fatty tumors. As they are perfectly free from pain, as they give no kind of inconvenience except from their size, when the parts in which they form do not appear externally, patients do not complain till they have attained considerable magnitude. If they become troublesome from their size, we have nothing to do but divide the integuments, lay bare the surface of the tumor, cut through the capsule, and, as I have said, you easily turn the tumor out. If the tumor be so situated as to be subjected to friction from the dress, or irritation from any other external causes, you may find the integument and capsule adhering to it more firmly than you expect; and, under such circumstances, you find that at the lower surface it adheres closely to the parts on which it lies, and that numerous vessels enter it. I lately removed a pretty large mass of this kind from the back of the neck of a baker. The integu-



ments adhered very firmly; and the tumor was strongly attached to the muscles of the neck, and there was free bleeding. When the tumor was removed, I took up no less than twenty arteries, though I have observed that in general the arteries are few and small in fatty tumors. Now as we have seen that these tumors are of indolent character, and give no inconvenience to the patient, it frequently happens that they are allowed thus to increase to a very great bulk, and these fatty tumors constitute some of the largest specimens of such preternatural productions that we are acquainted with. Mr. Copeland removed a fatty tumor from a lady's thigh, which weighed twenty-two pounds. That is a considerable size; for you will recollect that fat is very light; so that it must be a large tumor to weigh that. Sir Astley Cooper removed one from the abdomen of a man, that weighed a great deal more. The case is related in the eleventh volume of the Transactions of the Medical and Chirurgical Society, and is accompanied with a figure; and in the engraving the tumor seems almost the size of the man: it was a mass of fat. Sir Astley Cooper weighed it, and it was found to be thirty-seven pounds ten ounces. There was a tumor removed by a French surgeon, from the left hypochondrium, which weighed forty-six pounds: it was only one of eight in the same patient. He had seven others, not quite so large; and it is a circumstance which is sometimes observed in these cases of fatty tumors, that a number of such productions exist in different parts of the body.

Mr. Abernethy describes a tumor under the name of *pancreatic sarcoma*, stating it to consist of masses connected together by the cellular membrane, which in point of colour, figure, and size, resemble the separate masses which constitute the pancreas. He mentions only one case of that tumor, and that was a case which, according to his description, must have been in the lymphatic glands situated under the jaw. Now it has occurred to me to see various instances of tumors, nearly resembling that described by Mr. Abernethy, situated in the angle at the base of the jaw; that is, close to the parotid and submaxillary glands; and the question naturally arises, whether the peculiar character of tumor in this instance can be referred to their local situation; that is, whether they derive their likeness to the structure of the parotid and submaxillary glands from the circumstance of being formed near to them. All I can say is, I have not seen a similar tumor formed in any other part, and that there is a considerable analogy so far as this production can resemble the natural parts of the structure of these glands. The tumors that I now refer to are of a lobulated knotty feel; they seem as if they were composed of distinct masses. They are

hard, approaching in that respect to scirrhus tumors. The skin is loose over them, and the tumor itself is moveable on the parts on which it lies. In this respect you observe they do not resemble scirrhus tumors, which, after a certain time, become fixed to the parts on which they are seated. But these are slow in their growth and development, so that although they may have existed for some years, (and there are instances where they have existed for six, eight, or ten years), still they have the character of looseness in their situation, and the cellular texture surrounding them has not taken on the disease, by which they are discriminated from tumors of a scirrhus nature, although the mere feeling of hardness might lead you to confound them. When you come to examine the texture of the parts after removing them, you find, on making a section, that there is a good deal of likeness to the scirrhus structure, but that the texture is not so tough, nor so hard as scirrhus; it is softer, and instead of being tough and unyielding it will break short off. It has a light amber tint, something like the colour of a raw potatoe; and the tumor, when divided, has a slightly lobulated aspect. Occasionally there is an intermixture in these tumors of streaks and patches of blood, which would lead you to suppose that they had some analogy with tumors of a fungoid character—to fungous hæmatodes, though in no instances that I have seen has there been any real approximation in their nature to that disease. These tumors cannot be checked in their progress by any external applications, or by medicines. You have nothing to do except to remove them; and you had better do that when they are of small size, for they will invariably attain to a considerable magnitude, and they are then so often developed very deeply, and are so intimately connected with the blood-vessels and nerves, and other important parts about the angle of the jaw, that the operation is by no means an easy one.

I was consulted in a case of this kind some years ago by a gentleman, about forty years of age. He had a tumor, of the character that I have mentioned to you, about as large as an orange, seated behind the ramus of the jaw, and advancing over this towards the cheek. It had already existed there between eight and ten years, producing no inconvenience except what arose from its size, and it had now become troublesome on that account, when the jaw was moved. It extended towards the ear, and lifted up the labule of that part, and formed a large mass, which was unpleasant in appearance. I found the skin loose and moveable over it, and I could move the tumor easily on the part on which it lay, but yet I was not quite satisfied that the base was moveable, for in fact the base was so sunk that I could not exactly ascertain the extent of it. I told

him I could suggest nothing but the removal of the tumor; that if he disliked the appearance of the tumor, or found it troublesome, he must have it cut out, but I thought the operation was formidable. He made up his mind to have it taken out, and I removed it accordingly. It was necessary to make two incisions, one extending nearly from the corner of the mouth behind the lobule of the ear, and one transversely to this, like the letter T. By these means I got the surface of the tumor bare, but I had more difficulty in detaching the base. In fact, large arteries entered it, and the division of these produced copious bleeding. In dissecting it I found the base penetrated so deeply that I could not get under it; and I then found it necessary to cut the tumor, and in so doing I perceived that fluid escaped from it. I left behind a part of the tumor, between the angle of the jaw and the pterygoid process; and I thought after I had got rid of a portion of the tumor it would be more easy to extirpate the rest, and I did cut out what seemed to be the remaining part, which went very deep. When I had done this I found there was a prolongation of it inwards, under the angle of the jaw, different in its apparent texture from the part of the tumor that I had removed; that is, it was a soft, bloody looking, friable mass, surrounded by a thin white capsule, and it passed in the interval between the external and internal carotid arteries. I carefully dissected it from the surface of the arteries, and denuded both the internal and external carotids, and took away as much of the tumor as I could. When one is working among vessels of this kind it is not easy to get past them to come to the base of a tumor. I found, by inserting my finger, that the tumor extended to the middle of the vertebral column. I then went behind the pharynx, and broke down the adhesions of the tumor as well as I could, and fancied I had at length got the whole of it out. I then approximated the edges of the wound, and united them by suture. The gentleman lost an immense quantity of blood during the operation, but being a stout hearty man, this was favourable to him. When I examined the tumor, I found it with a texture resembling schirrus; it was of a light yellow colour, and rather firm, but in the centre there was a cavity, and the texture of the tumor assumed a bloody character. There was an intermixture of spots of coagulated lymph, and that part of the tumor that proceeded to the interior of the neck was of a decidedly bloody appearance, which might be set down as fungus hæmatodes, or not distinguishable from it. I shewed this tumor to persons well conversant with the characters of these morbid affections, and they gave an unfavourable opinion respecting the nature and probable issue of the case. They considered

that the texture was allied to fungus hæmatodes, and that those consequences which result from meddling with tumors of that class, would occur. I should have observed that I shewed it to Mr. Wardrop, and he said that he did not apprehend any consequences of that kind. He said it was a sort of tumor he was familiar with, having seen instances of it in the neighbourhood of the jaw, and he thought the patient would do well; and so it turned out. The union went on very favourably. I performed the operation in August 1826, and the patient was well and able to go about his business in less than a fortnight. I have seen him within a few days, and he is perfectly well, never having had any thing like a reproduction of the tumor in the part, nor any other unfavourable consequences. I must observe, that in this case I noticed what I have seen in other cases where I have removed deeply-seated tumors—that the facial nerve was divided, which was followed by paralysis of the muscles of that side of the face; the mouth was drawn aside, and the lower eyelid was affected so that the eye could not be closed. Now, since the time that I have mentioned, the mouth has come nearly straight, but the gentleman is not able to close the eye, as the orbicularis palpebrarum has not recovered its action; but he suffers no other inconvenience.

I remember assisting Mr. Macilwain in removing a tumor of this kind from the face of an elderly gentleman, about 60 years of age. There was an intermixture of a bloody appearance with the mass of the tumor, which led to an unfavourable opinion as to the result of the case. The gentleman died of erysipelas within a fortnight after the operation, which afforded an opportunity of examining the body, and it shewed none of those internal affections which take place in fungus hæmatodes. I have removed tumors similar to this in several other instances, and in all of them the productions had existed for a considerable length of time. They had grown very slowly, and they had not extended to the surrounding parts in the way that schirrous productions do; and they have shewn in no instance any thing like a malignant tendency; so that I have no hesitation in saying that pancreatic sarcoma, constituting the tumors that grow in the situation that I have alluded to, is of an innocent nature.

Mr. Abernethy has a class which he calls *cystic sarcoma*—that is, a tumor in which there are cysts; but the examples he gives consist of a deterioration of particular organs, such as the ovary and testicle, and so forth; which properly ought to be considered under the head of tubercles.

He has a class of *mammary sarcoma*—that is, a tumor in consistence like udder; about which I have nothing to say.

He has a set of tumors under the head of *tuberculated sarcoma*, which are developed in the lymphatic glands, and subsequently followed by the formation of numerous tubercles over the external surface of the body, and by death; after which, the existence of similar productions in a great number of internal organs is discovered—that is, in fact, this tubercular sarcoma is a kind of malignant tumor, according to the description of Mr. Abernethy, leading to the production of new growths in various parts of the body, and terminating life in that way.

Now I have seen a case which, I suppose, should be arranged under the head of malignant sarcoma, which had not that fatal termination; and which I shall mention to you, that you may not suppose too hastily that tumors which multiply themselves in various parts of the body, though attended with serious symptoms, are necessarily fatal; for the truth is, that in many of those diseases that are so important, we must not be too quick in generalizing, laying down rules for practice and acting upon them, as if we understood the subject perfectly. I saw a gentleman who had a tumor on the inner and anterior part of the thigh, just above the knee. This tumor was seen by a surgeon of the very first eminence and most extensive practice, and who had a great general knowledge of his profession. It had formed spontaneously, and had increased rapidly; and he deemed it to be fungus hæmatodes. He represented to the gentleman that it was necessary that his thigh should be removed; and he made arrangements, in consequence of which this gentleman came to London and took lodgings, and a day was appointed for the operation. When the surgeon came to perform it, he hesitated. He had in his mind the fatal termination of numerous cases that appeared to resemble this disease in nature, and he made some excuse to the patient for not doing the operation that day. He subsequently proposed that a consultation should be held, in which four or five of the most eminent surgeons in London met to see the case, and give their opinion as to what was proper. These gentlemen met, and I think they included Sir Everard Home, Mr. Cline, Mr. Abernethy, and one other, beside the gentleman under whose care the patient was; at all events there were five of the most scientific men in London. They decided unanimously that the case was hopeless, and that no operation ought to be performed. The gentleman was advised to go back to the country, and they made up the best story they could to reconcile him to his fate, without telling him in direct terms that he went back to die. But when he got back, he began to see that death was the fate that awaited him. Now he was not quite disposed to acquiesce in this decision, and he determined to have the opinion of two more surgeons.

He requested the advice of Sir Wm. Blizard and myself. We went to the country to see him, and at that time there was a large tumor, of a bright red colour, in the situation that I have mentioned—the inside of the thigh, above the knee. There was also a tumor, the size of an egg, on the back of the pelvis; there was another, about the same size, on the loins, and another situated on the superciliary ridge. On the right or left side of the body (I forget which) there was a great variety of tumors; also on the arms and legs. The gentleman was worn down to the greatest degree of emaciation, by excessive pain and want of rest. He had a small and feeble pulse, profuse and fetid perspiration, got no sleep, and in fact he seemed just going into the grave. For my own part, the case appeared hopeless, and I said so. Sir Wm. Blizard did not go quite so far; he said he thought the case was as nearly desperate as it could be, but that there was a ray of hope if the thigh was removed. This was mentioned to the gentleman, who said that he would let us know the result of his determination in a few days. I heard no more of it; but I found that he had sent for Sir Wm. Blizard and had the limb removed. The loss of the limb was of the greatest service to him; it seemed to remove the immediate source of irritation; he got sleep; in fact, the wound healed up, he got well, and after some time he regained his strength altogether. This operation was performed in the year 1819—that is, about ten years ago. About two years since, the tumor over the eyebrow increased, and that was removed by the medical attendant where he lived. About a year ago, there was a tumor on the fore-arm that had extended considerably; it had attained the size of a walnut, and produced great pain up the whole limb—a kind of nervous affection. He sent for me to take it out. It was deeply seated and closely connected with the ulnar nerve; so much so, indeed, that it almost appeared to be developed in its substance. I had an opportunity of ascertaining that there was a tumor at the back of the pelvis, and one on the lumbar region; and in the same situation I felt a small one under the skin, and a great many tumors on the parts that I have already mentioned. This gentleman was not in a state of robust health, but at all events he was tolerably comfortable, and he owes his life to the operation of Sir W. Blizard, under circumstances which, according to the rules that are generally laid down, would have entirely precluded its performance. I mention this instance to shew that you are not hastily to conclude that these cases, however malignant the character of the affection may appear to be, are altogether out of the reach of surgical aid.



PATHOLOGICAL RESEARCHES  
ON  
INFLAMMATION OF THE VEINS OF  
THE UTERUS, &c.

BY ROBERT LEE, M.D. &c. &c.

[Med. Chir. Trans. Vol. XV. Part. 2.]

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IN our second volume (page 701) we gave an extended abstract of a paper by Mr. Arnott, on the secondary effects of inflammation of the veins. Among the many highly important facts and inferences detailed by that gentleman, was the presence of phlebitis in parturient women as a frequent occurrence, and the cause of some of the obscure morbid phenomena witnessed in that condition. Mr. Arnott's investigations regard the venous system in general; and the evidence he adduces most satisfactorily proves the great importance of its morbid conditions—especially in the production of obscure forms of disease—terminating in or attended with purulent depositions, or other disorganization in distant parts. On the same occasion on which Mr. Arnott's paper was read before the Medico-Chirurgical Society, a case was communicated by Dr. Lee, in which a woman who had died of puerperal fever was found to have inflammation of the uterine and spermatic veins. This was the first of a series of most interesting investigations on uterine phlebitis; and when we consider the obscurity which hangs over many of the most important diseases of the puerperal state, we hail with satisfaction every attempt to elucidate their nature. Dr. Lee's labours in this field of inquiry appear to us highly deserving the attention of the profession on this account, and although we have already given a long abstract in a preceding number (No. 121), from the interesting paper which heads this article, we think it our duty to recur to it, and to present our readers with a more extended analysis of its contents.

With regard to phlegmasia dolens, it may be as well to observe here, that in a former communication to the Med. Chir. Society\*,

Dr. Lee brought forward satisfactory evidence in confirmation of the fact which had already been noticed—that in this disease, the trunks and principal branches of the affected extremity are inflamed, but the origin of the inflammation was still a subject of doubt, and its cause remained unaccounted for.

In the paper before us these points are cleared up, and the disputes concerning the nature of this hitherto inexplicable affection are, we hope, set at rest for ever; and we must do Dr. Lee the justice to acknowledge that to him belongs the merit of the discovery of the important pathological fact, that the inflammation of the iliac and femoral veins takes its rise in the uterine branches of the hypogastric veins, and extends from them to the venous trunks of the affected extremity.

The facts brought forward to confirm these views, are, in our opinion, strong enough to convince the most sceptical; and before making any other observations, we shall at once lay them before our readers.

The first case is one of phlegmasia dolens, which proved fatal, and which we shall extract *verbatim*, since it possesses peculiar interest, not only as illustrative of the nature of the disease in question, but as affording, perhaps, the most striking example yet recorded of extensive disorganization of the venous system by inflammation, and of the powers of nature in carrying on the circulation, when even the vena cava itself has in consequence become completely obstructed. We know also of no other case where an opportunity of a post-mortem examination has been afforded of a patient who had twice laboured under phlegmasia dolens, with a considerable interval of time intervening between the two attacks. Independently of these circumstances, this case shews that, if phlegmasia dolens be often a disease of a mild nature, it occasionally assumes a severe character, and puts on one of the worst forms of phlebitis.

"Mrs. Edwards, æt. 35, No. 54, King-Street. 16th of April, 1829, was delivered of her second child, three weeks ago, after a natural labour, and on the 9th inst. was attacked suddenly with pain in the calf of the right leg, and loss of power in the whole right inferior extremity.

"On the 13th, a considerable swelling,

\* A contribution to the Pathology of Phlegmasia Dolens, by Robert Lee, M.D.—Med. Chir. Trans. Vol. XV. Part I.

without discolouration, had taken place from the ham to the foot, and great tenderness was experienced along the inner surface of the thigh to the groin.

"The extremity is now universally swollen, painful, and deprived of all power of motion. The temperature along the inner surface of the limb is increased; the integuments are pale and glistening, and do not pit upon pressure. There is no pain in the hypogastrium, but pressure along the course of the crural vessels excites great suffering, and the vein from the groin to the middle of the thigh is indurated, enlarged, and exquisitely sensible. There is also great sensibility in the ham, and along the inner surface of the leg to the ankle, where some branches of the superficial veins are hard and painful on pressure. Pulse 80; tongue much loaded; thirst; bowels open. There was no rigor, or symptom of pyrexia, at the invasion of the disease. She states that the veins of the right extremity were more distended during pregnancy than those of the left.

"Twelve years ago, after the birth of her first child, the patient and her relatives report, that she experienced an attack similar to the present, in the same limb, and that it remained in a weak condition for several months afterwards, but ultimately recovered its natural size and power.

"April 18th.—The tension and increased heat along the inner surface of the limb are somewhat diminished, but the pain continues in the course of the vessels.

"May 1st.—Affection declining. The femoral vein cannot now be felt, but there is still a sense of tenderness in its course down the thigh; no pitting on pressure. She has suffered, during three or four days, considerable uneasiness between the umbilicus and pubis, as well as in the loins, and has had rigors, with quick pulse, loaded tongue, and thirst. The abdomen is soft, but tender on pressure around the umbilicus.

"9th.—The swelling of the limb is nearly gone, as is the tenderness in the course of the femoral vessels. For several days past, she has experienced attacks of acute pain in the umbilical region, loins, and back, which have assumed a regular intermittent form. Every afternoon there has been a violent rigor, of an hour's duration, followed by increased heat and profuse perspiration. In the course of the last and preceding nights, there was slight delirium. The skin is now hot and dry; the pulse 125; the tongue brown and parched; bowels open.

"The abdomen is neither tense nor swollen. On pressing around the umbilicus, she complains of a deep-seated feeling of soreness. A strong vibratory motion, corresponding with the pulsations of the heart, is perceived in the epigastrium.

"21st.—The febrile attacks gradually declined in severity, and she appeared to reco-

ver, until yesterday, when she had a long and violent fit of cold shivering. The countenance is now expressive of great anxiety, and the pulse extremely quick and feeble. There remains no visible trace of the affection of the lower extremity.

"23d.—Has been vomiting ever since yesterday, at intervals of half an hour. Complains of great pain in the left side, increased upon taking a deep inspiration. The pulsation in the epigastrium diminished, although it is still clearly perceived. Pulse 120, and soft.

"24th.—Symptoms continue without alleviation. Has had a severe shivering fit of long duration. Skin hot and dry; pulse 140; tongue brown and parched; diarrhœa. The pulsation in the epigastrium has entirely disappeared; the pain in the left side of the thorax is diminished; but the respiration is hurried, and there is frequent cough. Great prostration of strength. Surface of the body has assumed a peculiar sallowness. She has been delirious in the night, but is now perfectly conscious when roused.

"The conjunctiva of the right eye has suddenly become of a deep red colour, and so much swollen that the eyelids cannot be closed. The cornea is dull, she makes little complaint of pain in the eye, and there is no intolerance of light. The vomiting has ceased.

"25th.—Has again had repeated attacks of vomiting. Debility rapidly increasing; respiration hurried; incessant hacking cough; pulse 140, extremely feeble; surface of the body cold and clammy; the tongue and teeth covered with dark sordes; diarrhœa. The left eye has also become red and swollen, without much increased sensibility.

"26th.—Great debility; when undisturbed she is delirious, but is conscious when roused, and complains of pain in the left side of the chest. Pulse above 140. Tongue black and dry. Conjunctiva of left eye also affected with swelling and intense redness. The cornea is dull, and shreds of lymph appear to have been effused over the left iris.

"28th.—Had so violent a rigor in the afternoon that the bed shook under her. She is now completely insensible. The eyes are red and swollen, and there is a copious secretion of an opaque fluid from their surface and from the eye-lids, which cannot be closed. The respiration hurried. Pulse 140.

"June 2d.—Great debility. A red puffy swelling has suddenly appeared over the right elbow-joint. Tongue dry and black; diarrhœa; frequent, or rather constant, wandering, except when spoken to, when she answers questions distinctly, and complains only of pain in the chest, with difficult respiration and cough.

"10th.—Little change has taken place in the symptoms; but she has become much weaker. The vision is lost, but the hearing

is perfect, and she makes no complaint of pain in any part of the body.

"15th.—Died this morning.

"*Morbid Appearances on examining the Body of Sarah Edwards on the 16th June.*—Present, Drs. Sims and Locock.

"*Thorax.*—In its left cavity were contained upwards of two pints of a thin purulent fluid, and extensive recent adhesions existed between the pleura covering the lower margin of the superior lobe, and the pleura costalis. The surface of the inferior lobe was coated with a thick layer of flocculent coagulated lymph, as was a corresponding part of the pleura costalis. The substance of this lobe was of a dark colour, approaching to black, and soft in texture, so as to be readily broken down with the fingers. In its centre about an ounce of thick cream-coloured pus was found deposited in the dark-coloured and softened lung. This was not contained in any cyst or membrane, but infiltrated into the pulmonary tissue.

"In the right cavity of the chest, recent adhesions also existed at the inferior part. A considerable portion of the right inferior lobe was entirely changed from the healthy structure, being converted into a dense, solid, dark red-coloured mass. On the anterior surface of this lobe the pleura was elevated, as if by a hard irregular tumor, but when cut into, no pus escaped from this part, and it presented only the appearance of the surrounding portions of lung with a greater degree of condensation.

"*Vena cava inferior.*—Coats of the vessel considerably thickened, and the internal, where visible, of a scarlet colour; its whole cavity occupied by a coagulum, distending it to its utmost extent, and terminating in a loose pointed extremity about an inch below the entrance of the vena cava hepatica. The coagulum covered with a membranous-like investiture of a bright red colour, throughout firmly, and in many places inseparably, adherent to the inner lining of the vein; the substance within it varied in consistence and colour; in some parts it presented the appearance of coagulable lymph, in others it was a pultaceous dull yellow mass, made up apparently of pus and lymph blended together. The exterior of the firmer portions were separated into layers, which gradually disappeared as they approached the centre. The mouths of all the veins emptying themselves into the cava were sealed up, the emulgents excepted, the coagulum near the entrance of these vessels hanging loosely within the cava.

"*Left common iliac and its branches.*—Its interior plugged up with a continuation of the coagulum from the cava, and differing in no respect from it either as to consistence, colour, or the firmness of its adhesions to the inner tunic of the vein; it was continued

beyond the entrance of the internal iliac, (which it completely closed,) and terminated in a pointed extremity about the middle of the external iliac: neither the remainder of this vessel nor the femoral vein exhibited any morbid changes. The internal iliac was much contracted, and lined with a thick adventitious membrane.

"*Right common iliac and its branches.*—This vessel was contracted to more than one-half its natural size; it was firm to the touch, and of a greyish blue colour; to its internal coat adhered an adventitious membrane, of the same colour, containing within it a firm coagulum, made up of thin layers of dense lymph. The internal iliac was rendered quite impervious by dense dark-coloured bluish membranes, and at its entrance into the common iliac was converted into a solid cord.

"The contracted external iliac contained within it a soft yellowish coagulum, similar to the one in the cava; its coats were three or four times their natural thickness, and lined with dark-coloured membranous layers.

"The femoral vein, from Poupart's ligament to the middle of the thigh, was diminished in size, and almost inseparable from the artery. Its tunics were thickened, and its interior coated with a dense membrane surrounding a solid purple coagulum strongly adherent to it. The superficial and deep femoral veins were in a similar condition, and the saphena major and minor differed from the femoral veins only in the size of the coagulum they contained, which was slender, and had formed no adhesions with the layers of lymph lining their cavity.

"The cellular membrane and other textures of the limb were in a perfectly healthy condition, and in size and appearance there was externally no visible difference between the two extremities."

The second case related by Dr. Lee offers the clearest testimony of the truth of his views regarding the nature and origin of phlegmasia dolens. The subject of it died of tubercular phthisis about three months after her confinement. On dissection the uterine plexus and trunks of both hypogastric veins were found alike disorganized; on the left side the inflammation had extended to the iliac and femoral veins, which were thereby rendered impervious, and the return of blood being prevented, the limb, as a consequence, had become swollen and painful; in short, it had been affected with phlegmasia dolens. The same morbid appearances presented themselves in the uterine plexus and trunk of the right hypogastric vein, which, by an anomalous course, terminated



in the left common iliac. The veins returning the blood from the right inferior extremity, viz. the common and external iliac, were healthy, and they owed their immunity from inflammation without doubt to the singular course of the right hypogastric vein. The circulation in the right iliac veins being unobstructed, the corresponding extremity, as was to be expected, shewed none of the signs of phlegmasia dolens.

In the third case both legs were affected, and the veins of both on dissection were found obstructed by inflammation, which had extended for some distance even into the vena cava.

Accurate representations of the morbid appearances of the veins in the two last cases, are given at the end of the volume, and, when the paper was read, a beautiful drawing of those in the first case was exhibited, as well as preparations of all the inflamed veins which Dr. Lee had met with whilst investigating the subject.

In the 4th, 5th, and 6th cases, though the fact of the existence of inflammation of the veins was not demonstrable by dissection, we have the strongest presumptive evidence which symptoms can offer, that they were so affected, and the extremities presented all the characteristic signs of phlegmasia dolens.

It has been objected that the cases published by Dr. Lee are not genuine examples of phlegmasia dolens, since they differ from this disease both in the severity of their symptoms, and in the appearance presented by the affected limbs. We hold the latter objection to be of no force, for Dr. Lee's own testimony respecting the exterior character of the complaint is corroborated by that of many of his professional friends; and besides this, if his descriptions be compared with those of the best writers on phlegmasia dolens, they will be found to agree with them in every respect: but even supposing this were not the case, we are of opinion that minor shades of difference in the appearance of the swollen extremity would be of no consequence, since they might depend on the strength and age of the patient, on the condition of the integuments, and on the mode of attack. If the last be sudden and violent, and the integuments be firm and unyielding, the pain of course will be greater, and the

swelling more characteristic, than when the skin is flaccid, or when, in consequence of a slower obliteration of the veins, the effusion into the cellular substance has taken place more gradually. Under the latter circumstances, if we except the pain in the course of the vessels, the limb will not differ from an anasarctous one; nor will it do so in the latter stages of the complaint, whatever may have been its peculiar character at the earlier periods. In some instances, this anasarctous condition of the limb, and a varicose state of the veins, will continue for a period of years. In a case Dr. Lee gave us an opportunity of witnessing, three years had elapsed from the attack which had affected both extremities: at the time we saw the patient, these were swollen and weak, and the superficial veins of both were varicose. The peculiarity in this instance, however, was the enormous size of the superficial veins of the abdomen, which were seen running in a tortuous direction under the integuments, as large in appearance as the femoral or iliac veins, and there is every reason to suppose that they were thus enlarged to assist in carrying on the circulation, the venous trunks of the extremities having been obliterated by inflammation.

As regards the severity of the symptoms in Dr. Lee's cases, we must confess we were at first staggered, though be it remembered, that he is not the first who has met with fatal cases of phlegmasia dolens: we had considered it as almost always a disease of a mild nature, scarcely requiring medical interposition, and very rarely terminating unfavourably: such is still the opinion of many, but is not this opinion the result rather of preconceived notions than of experience, and is it not probable that the idea generally prevalent of its innocuous nature, may have deterred many from publishing the unfortunate results of their practice? As far as we ourselves are concerned, Dr. Lee's cases and arguments have convinced us of our error. We admit also that he has established the fact of phlegmasia dolens originating in the uterine veins, or, in other words, that it is one of the consequences of uterine phlebitis. Why uterine phlebitis should not always be followed by phlegmasia dolens, is explained by the fact of the sper-

matic veins alone being for the most part inflamed, or by the inflammation, if it attacks the hypogastric veins, being arrested at the termination of these veins in the iliacs. Why phlegmasia dolens should not always be accompanied with the graver symptoms of uterine phlebitis, is a question more difficult of solution, but the same difficulty presents itself in the explanation of the varieties of many other diseases. Much, of course, will depend on the degree and extent of the inflammation. It seems absolutely necessary to the production of phlegmasia dolens, that the inflammation should affect the great veins of the extremities: now we know that when veins become inflamed, the inflammation is prone to extend in a direction contrary to the circulation; hence one of the reasons of phlegmasia dolens following an attack of uterine phlebitis: we also know that the inflammation is apt to be arrested at the junction of branches with their trunks; consequently it may exist in the uterine veins without the production of the swelled leg, the iliac and femoral veins remaining unaffected.

The circumstance most difficult of explanation is, the comparative mildness of the symptoms in the generality of cases of phlegmasia dolens, where so important a system of vessels as that of the veins is implicated in disease. If we might hazard a conjecture on the subject, we should say that in the ordinary cases of phlegmasia dolens, the inflammation runs rapidly from the uterus to the common iliacs, which it obliterates or seals up by an effusion of lymph before any of the morbid products of inflammation can become mixed with the circulating blood; and to give weight to this opinion, we would cite the second case, where, though the veins were extensively disorganized, no symptoms of phlebitis ensued: the reason was apparent on dissection, the left common iliac into which both hypogastric veins emptied themselves having been found converted into an impervious cord. The first case and the seventh might be brought forward to prove, that the severity of the symptoms is owing to the extension of the inflammation into the vena cava without producing entire obliteration of its cavity, and thereby preventing the mor-

bid secretion from entering into the mass of blood.

We may sum up these remarks by observing, that the disease in question will be, like all others, modified by the constitution of the patient, by the degree of inflammation, and by the rapidity of its march; and that its fatal effects will be most generally averted by the sudden obliteration of the inflamed veins.

In addition to the cases he has related, Dr. Lee adduces a body of evidence from the writings of others, to substantiate his own. The authors, however, whom he has quoted, though they shew the existence of inflammation in the veins, seem to have been quite in the dark respecting its origin in the venous system of the uterus.

Dr. Lee having by numerous facts and deductions rendered it apparent that phlegmasia dolens is never present unless there be obstruction in consequence of inflammation of the veins returning the blood from the affected extremity, it behoves those who still doubt the correctness of his views, to bring forward evidence equally satisfactory, that phlegmasia dolens can exist, these veins remaining in a state of immunity from disease. Until then we shall not allow the absurd theories respecting this disease—theories which, by the way, never offered even any plausible explanation of its phenomena—to regain possession of our minds, but shall remain convinced of the truth of the facts contained in the paper before us, both because we can rely on their authenticity, and because they offer a ready solution of all the difficulties in which the question has been heretofore involved.

This point settled, we come to what we consider one of the most important parts of the paper, where Dr. Lee shews the connexion of phlegmasia dolens with uterine phlebitis. He commences by observing, that

“All the different authors who have treated of phlegmasia dolens describe it as commencing, in the great majority of cases, subsequent to the tenth day after parturition, with symptoms of uterine irritation, and constitutional disturbance of a low nervous character, and with pain and swelling in one extremity only. They have assigned various reasons for these remarkable peculiari-

ties in the period and mode of development of the disease, as pressure of the gravid uterus on the iliac veins during gestation, the change in the distribution of the blood from the sudden removal of this pressure, exposure of the extremity to cold, suppression of the lochial discharge, &c. all of which, however, taken singly, or combined, are insufficient to account for the phenomena; and the occurrence of the disease after menstruation and abortion proves that these causes are not necessary for its production. The facts which have now been stated afford a more satisfactory explanation of these phenomena, and shew, that if inflammation be excited in the orifices of the uterine veins, it may spread along these to the iliac and femoral veins, and by the morbid changes induced in them, give rise to all the subsequent symptoms.

"The mode of development and extension of the inflammation from the uterine to the iliac and femoral veins of the affected extremity, will be best understood by a concise statement of the principal facts relating to uterine phlebitis, of which phlegmasia dolens must now be considered as merely one of the remote consequences."

From the statement which follows, it would appear that, by the separation of the placenta, the orifices of the uterine veins are left in a state favourable to the production of inflammation; which being once excited, extends with greater or less rapidity along the continuous membrane of these vessels to the spermatic or hypogastric veins, and from them to the vena cava and its principal branches, returning the blood from the lower extremities.

The effects of inflammation in these veins, are the formation of adventitious membranes on their inner surfaces, and the deposition of coagula of lymph, or of purulent matter, within their cavities.

"The inflammation may be limited to the veins, but not unfrequently the muscular tissue of the uterus contiguous to them participates in the inflammation, and becomes of a dark-red or blackish-brown colour, and so soft in its consistence as to be readily torn with the fingers. The peritoneal covering may be also affected, and the usual consequences of puerperal peritonitis will then ensue."

The veins returning the blood from the uterus may be either wholly or in part inflamed; it is remarkable, however, that

generally the spermatic veins alone are attacked, and for the most part the one only on the side of the uterus to which the placenta had been adherent. The inflammation may be limited to a small portion of the vessel, or extend through its whole course. If the hypogastric veins be affected, it happens commonly that the inflammation is also confined to one of these vessels; they are, however, less liable to the disease than the spermatics; and to this circumstance may be ascribed the comparatively rare occurrence of phlegmasia dolens as a consequence of uterine phlebitis, which we believe to be of more frequent occurrence than is generally imagined; and we are confirmed in this belief by the fact of the uterine veins being so often found obliterated in old women who have died of other diseases.

The causes of uterine phlebitis are mechanical injury, decomposition of portions of placenta retained in the uterus, the application of cold, contagion, &c.

The invasion of the disease is uncertain; it may attack the patient soon after delivery, or even so late as the twentieth day. Its duration is equally indeterminate.

With regard to the symptoms, they will vary according to the tissue affected. If the veins only be implicated, there is often either no pain or a dull heavy pain only, about the region of the uterus. If the substance of the uterus be inflamed, this organ is felt above the pubes, and is acutely painful on pressure.

"The constitutional symptoms of uterine phlebitis, and the important alterations which take place in the structure of the brain, lungs, and other internal organs, and also in the synovial, serous, and cellular membranes, are often so peculiar and characteristic, that it is the more remarkable this disease should have been so long overlooked by pathological inquirers."

These symptoms are so accurately described in the cases related by Dr. Lee, in illustration of his remarks, that we cannot do better than refer to them. The seventh case in particular, is well deserving an attentive perusal. The subject of it was attacked with phlebitis subsequent to parturition. The disease proved fatal;



and on dissection, the uterine and right spermatic veins were found highly inflamed and disorganized, and the effects of inflammation were also apparent in the vena cava and right emulgent vein. The lungs were affected with gangrene, and pneumonia-thorax existed on the right side of the chest.

Six other cases are given, and all of them are interesting, as exhibiting different varieties of an affection which has never been thoroughly investigated, and which, in this country, has as yet been scarcely noticed by pathologists. Recent experience has induced Dr. Lee to believe that many of the fatal disorders of puerperal women which have usually been comprehended under the vague designation of puerperal fever, or peritonitis, must be referred to uterine phlebitis.

"Inflammation of the uterus and its appendages," he adds, "may be considered as essentially the cause of all the destructive febrile affections which follow parturition; and the various forms they assume, inflammatory, congestive, or typhoid, will probably, in a great measure, be found to depend on the serous, muscular, or venous tissue of the organ having become affected."

We have extended our remarks to so great a length, that we can only slightly notice the remaining part of the paper, in which Dr. Lee presents us with the additional fact of the occurrence of inflammation of the veins of the uterus in malignant diseases of that organ. The 14th case is one of inflammation of the uterine veins, with carcinomatous ulceration of the os and cervix uteri; and the 15th is an example of inflammation of the left iliac and femoral veins, with phagedenic ulceration of the womb. In the last case, phlegmasia dolens had attacked the left inferior extremity; and from it, and from another recorded in the sixth volume of the *Archives Générales de Médecine*, it would appear that this affection is produced in the same manner as it is after parturition—viz. by the extension of inflammation to the iliac veins.

At a late meeting of the Medical and Chirurgical Society, Mr. Lawrence related an interesting case in confirmation of the above fact, and where phlegmasia dolens was caused by inflammation of the veins of

the lower extremity, excited by malignant ulceration of the cervix uteri.

In a man who died of cancer of the rectum in St. Bartholomew's Hospital, the same gentleman observed the iliac veins inflamed and obstructed; and at the meeting we have just alluded to, the case of a young man was read, in whom symptoms of phlegmasia dolens had manifested themselves during life. The post mortem examination shewed that the affection was produced by obstruction of the great veins of the limb, in consequence of inflammation; the veins of the pelvis were equally involved in the disease, and no cause could be assigned for this condition of the vessels, till it was discovered that the lower part of the rectum was extensively ulcerated.

From the above facts it is therefore evident that inflammation may be excited in the veins of the pelvis in both sexes, by diseases of the neighbouring organs; and that from them it may be propagated to the principal veins of the lower extremities, and give rise to the phenomena observed in phlegmasia dolens.

In conclusion we would observe, that whatever difference of opinion may exist as to the inferences Dr. Lee has drawn—and we believe correctly drawn—from his facts, the facts themselves must be regarded as highly important. They prove that inflammation of the venous system of the uterus is of frequent occurrence, not only subsequent to parturition, but also in malignant diseases of that organ; and that the symptoms it gives rise to present, from causes not easy to explain, many varieties of character—in some instances being so mild as scarcely to require medical aid, in others so grave as to bid defiance to all the resources of our art.

We particularly recommend the perusal of the cases and dissections in Dr. Lee's paper to our readers—they are all of them interesting, and are valuable contributions to the scanty stock of knowledge we possess of the diseases of the venous system.

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STATE OF THE PROFESSION—  
PHYSICIANS.

*To the Editor of the London Medical Gazette.*

SIR,

I RECEIVED much pleasure in the perusal of a paper by "A Country Practitioner," in a recent number of the *Gazette*. That was a business-like letter: it acknowledges a crying evil in our profession, and it seeks a direct and appreciable remedy. That letter originated from two preceding, of which the first was subscribed "Mediculus." I hoped that as "Mediculus" possessed some conceptions of the disorders of our profession, he would prescribe the appropriate remedies; but in a succeeding communication he has left the terram firman to soar into the clouds.

Λεπτολογεῖν ἤδη ζητεῖ, καὶ περὶ καπνῶν  
στερολεσχεῖν.

That our profession labours under great degradation, is evident, not only to the "Country Practitioner" and myself, but, doubtless, to great numbers who practise in it. *The* most striking illustration of this position is to be found in the existence of that *Journal* which yours was instituted to oppose. I believe that no learned profession, in any era of literature, ever tolerated and patronized such a production, except the medical body of these days; yet from a conviction that that *Journal* naturally sprung from the corruption of our corps, I have never felt that undivided contempt for it which many have uniformly experienced. But I have wished a thousand times, that a spirit of reform had been manifested and exerted by a sober-minded, discriminating, well-bred, and learned man—by some honest fellow, who really loved his profession. I wish I could see, as some declare *they* see, that even that *Journal* has been productive of good; but I greatly fear that it will serve to aggravate the very evil which it professes to combat—the corruption of the medical body. Heavens! there must indeed be need of reform, when *such* a reformer can boast of *any* disciples! It is not my intention to vent a philippic against a production which I should never have thought of mentioning,

save by the way of illustration. I assert the great prostration of our character as a profession, and my chief proof is the existence of a most profligate and plebeian professional *Journal*. Yet I will take this opportunity to express a surprise and a regret, which I share with thousands of my medical brethren, that an undue and monstrous consequence has been conferred on that work, by the very notice and opposition which it has received.

But to return to the *gravamina medicinæ*—whose existence cannot be denied—whose remedy is the problem to be solved. The "Country Practitioner" calls for legislation, and who will not second his call? Yet legislation, to be efficient, presupposes a certain degree and kind of *morale* in its objects. Legislation alone never has done, nor ever will do, all that is necessary to reform any body of men. I never could be convinced of the truth of Jeremy-Benthamism, which is, I presume, being interpreted, the doctrine that the miseries of the governed are to be laid wholly at the door of their governors; since by the Jeremy-Benthamic process any government may learn to make its subjects wise, good, and happy. Indeed this deduction has been plainly, and in so many words, conceded to me by the great apostle of Jeremy-Benthamism—by that gentleman who, it is said, translated into terrestrial English the celestial lucubrations of Mr. Bentham.

Now, sir, I cannot blind myself to the corruption of the medical body, which is evident in all directions. The company of apothecaries, no man can doubt, desire to purify their department of the profession; but their powers can only be wielded through the medium of the law. In answer to the suggestion and proffer of the "Country Practitioner," they have declared that the law is not available for the flagrant case which he denounced to them. I am utterly ignorant of law; and cannot, therefore, decide on the correctness of their assertion. But it is very evident to me that if the profession did what it ought—if the practitioners who reside in the neighbourhood of the huxter who is denounced—would, one and all, decline to meet a man who has the solitary merit of bringing fees to their pockets, the society of apothecaries,

would not be required to interfere. The fellow must, essentially, sink into the shades. Is there, or is there not, then, a hope to be cherished by us that *we* shall live to see the medical body pure and dignified? I say with reluctance, but with sincerity, that I can conceive none. The biography of the members in our art, in every form thereof—the facility which is afforded by the practice of medicine to deceit—to false assumption of merit, and to the concealment of professional error—convince me that ours can never become a high-minded and generous corps. Yet some palliation of unavoidable evil is not impossible; and the improving education of the young men, “who read for” (dis-) “orders,” is a guarantee that the future generation of British practitioners will have more of *professional* character than the past. I hold that the company of apothecaries, against which so much vituperation has been hurled, deserve well of their country, for that particular law which demands of their candidates an acquaintance with the Latin tongue. The rich stores of the magnanimous, which this knowledge will render accessible, it must be hoped will not be presented to medical students in vain. If I believe any thing, I believe most firmly that the more any man is imbued with a knowledge of the ancient classics, the more will he partake of those generous and pure sentiments which ought eminently to characterize the practitioner of the healing art. But as the medical world now goes, artifice and trickery are the passports to business and money. Physician, surgeon, apothecary, midwife; all are manœuvring for notoriety and employment.

The fastidious sentiments which animate the gentlemen at the bar, should pervade the breasts of the mass of physicians. During a circuit, the barrister is not permitted, by the regulations of his order, to “hug” the solicitor. But what perpetual hugging of the apothecary is manifested by the physician! I have seen it, and condemned it, in the city and the country; in the metropolis and the provinces. I have known such a man as he, who is denounced by the “country practitioner,” courted, invited, saluted, familiarly treated by *genuine* physicians. This conduct assuredly lowers the ancient respectability of the physician, and, in the long run, I imagine, it must affect his pocket.

The educated general practitioner must feel disgust at such proceedings, and he must vow to himself, as I have vowed, that bating the consultation with a physician, which his conscience pronounces to be needful, he will never encounter one professionally, when, without personality, he can escape the interview. There have been physicians who have even paid court to the editor of that journal which has already been mentioned. Think of that! It is only by fairly looking in the face of our gravamina, by confessing and decrying them, that we can effect the respectability of our art, and annihilate the systematic contempt for its professors, which it is the interest of some persons, pretending to professional feeling, to foster and augment. Of the manœuvres of the physician to obtain repute, one very common and very pitiful is, to write a book; not with a view of instructing the profession, but to captivate the crowd; not, as in days of yore, to publish his experience, or the results of profound and philosophic investigation, but to induce in the minds of those patients who labour under particular disorders an idea that he has made their disease the subject of his peculiar research. Hence a treatise by the young doctor on gout, to tell with the fashionable and luxurious; or on rheumatism, because it is so rife a malady; or on consumption, because it is the disorder most dreaded in families; or on scrofula, for it is the great complaint in England; or on disorders of the kidneys and bladder, if he happen to settle in a district infested with calculous maladies. I have known a young physician leave at the door of the apothecary his card and his inaugural thesis, “with the author’s compts.” superscribed. The stethoscope has been a successful weapon in the hands of many a finessing physician, who really does not possess the patience nor love of science necessary to the mastership of that important instrument. But the most nauseating specimens of puffing are to be found in private companies, at the dinner table, as soon as the glass has circulated a little: if there be a young physician present, you are certain to hear some professional egotism and technical palaver. There are as many exceptions as you, Mr. Editor, may demand to be made—but this is the general rule; to smell of the shop,



is the common failing. I have not room to touch on the faults of apothecaries—or general practitioners, which I defer to a subsequent communication.

A SURGEON, APOTHECARY, AND  
MAN-MIDWIFE.

# AN ILLUSTRATION

OF A

## FATAL SPECIES OF SCARLATINA,

*Lately prevalent at Plymouth.*

BY EDWARD BLACKMORE, M.D.

Physician to the Public Dispensary.

THE subject of the present communication is an impressive instance of the diversity remarkable in the constitution of particular diseases at various periods, and of the multiform sources of danger involved in them. The scarlet fever has not hitherto prevailed extensively among the general population, but has very much confined its attacks to the better classes; in whom, likewise, the most extreme mortality has taken place. Of seven cases which have come under the personal observation of the writer, one only was fatal; whereas, in the family of a surgeon-apothecary of this place, four who were attacked all perished, and in another family two died.

The absence of dangerous symptoms in the outset of the recent epidemic; its insidious progress, its rapid and unexpected fatal termination, with the obscurity which has confessedly overhung the causes of its high mortality, and the discrepancy of medical opinion here on the best method of obviating its ravages, concur to render the subsequent case not undeserving of consideration.

A. May, a fine girl, nearly three years of age, complained on the 25th of March of pain in the head, with retching, costiveness, and high fever, which was supposed by the mother to be the scarlet fever. Three days hereafter the fever is said to have "turned;" no sensible pain or difficulty in swallowing was remarked up to the fifth day, but the head complaint continued, with some delirium on this day. Costiveness, and perfect inappetency for food. Some purgative medicine alone had been

used. On the sixth day the case was first seen by a surgeon-apothecary, by whose directions a purgative was given, and a blister applied around the throat, which was remarked to be slightly ulcerated; no alarming symptom, however, presented itself. I saw her on the eighth day of the malady; slight fever then subsisted; the face was tumid, and of a purplish hue; some ichorous mucus flowed from the nostrils. Two ulcers were seen behind the tonsils, which were coated with viscid purulent mucus, devoid of bad fœtor, and of innocuous aspect. She was disposed to slight stupor, but perfectly sensible, and struggled in the nurse's arms on being disturbed. Nothing appeared to forbid a hopeful prognosis. When seen again two days afterwards, she was in the act of dying. Stupor had come on shortly after my previous visit; the respiration became obstructed; dark concrete sanious mucus filled the nostrils, and much fœtor was exhaled from the throat. Her whole aspect was that of one dying of putrid sore throat, with oppressed brain and lungs.

*Dissection* 40 hours P.M.—The abdomen and legs were very livid, with petechiæ; no tumidity; much gummy ichor in the nostrils. In the chest no pleuritic adhesions; no serum. The lungs very much engorged and dense with black fluid blood, particularly the left lung, but no extravasation of blood; no mucus in the air cells. The mucous membrane of the large bronchi stained by the congested blood; no vestige of confined inflammation. The right side of the heart was distended with a large mass of fibrine. Some fluid black blood remained in the left auricle and ventricle. The liver was large and healthy; the gall-bladder full of green bile. The spleen, intestines, and stomach, were natural, except that a tint of vascularity appeared on the cardiac portion of the mucous coat of the latter organ. The brain was engorged with black blood, and its ventricles held  $\frac{3}{4}$ ss. of bloody serum: its substance was dense. In the palate, deep behind the tonsils, on the verge of the posterior nares, were seated two large ulcers, covered with very fetid matter, like soft rotten cheese, but with no positive vestige of gangrene. The larynx and trachea were healthy. Marvellous as it may appear, the present is the only instance, in so far as the writer can learn,

where an anatomical inspection has taken place.

With regard to the mode of death, and its immediate causes, it may be observed that a rapid transition from a state of innocuous disorder to one of imminent danger, (which has characterized all the fatal cases within the writer's knowledge), seldom or never happens in the mode of direct debility, but is to be referred on the soundest physiological principles to the oppression of some vital organ. That such was the occasion of the fatal issue in the present case is determined by the history and the dissection. The remote causes of the coma, and the suffocation, were, I presume, 1st, the high eruption in fever, and next the fetid caseous pus which exuded from the ulcers in the throat, and obstructed the nostrils. Not that I conceive the local disease to have been a merely mechanical impediment to respiration; the morbid secretions may have had a poisonous influence on the pulmonic nerves, and thus have suspended the vital action in the lungs. As all the fatal cases exhibited similar phenomena with the present except that in a few there was less of febrile excitement and earlier stupor, analogous to the congestive typhus, it may be concluded that in all the immediate causes of death were the same.

If this exposition of the pathology of the recent malady be correct, the most successful mode of treatment cannot be obscure, *i. e.* decisive anti-febrile remedies in the outset, and towards the end severe counter irritation on the skin, with emetics. The capsicum gargle has been deemed by some to be of specific virtue, and blood-letting to be injurious; but in the writer's experience the deep corroding ulceration in the throat has been always attended by strong febrile action, and been checked by general evacuants. Moreover, the unquestionable oppression of internal organs, by sanguineous congestion, most certainly contra-indicates the use of excitants, such as were specific in the malignant ulcerous sore throat of former times.

Plymouth, April 12, 1830.

## OBSERVATIONS

ON THE

## REMOVAL OF THE CHRYSTALLINE LENS.

By RICHARD MIDDLEMORE, Esq.

Assistant Surgeon, Birmingham Eye Infirmary.

In my last communication I objected to the early extraction of the crystalline lens; first, because such an operation was generally unnecessary; and, secondly, because it was, in many instances, calculated to be highly injurious. I represented that when a section of the cornea, and wound of the capsule only took place, producing a displacement of the lens, such an occurrence in young subjects was not commonly succeeded by any very serious consequences, on account of the softness of the lens, and the activity of absorption. I attempted to shew, that when the same accident occurred at a more advanced period of life, an early operation only became necessary from some peculiar position of the displaced lens, or some morbid action with which the eye had been previously affected. I shall on the present occasion endeavour to point out those circumstances which render such an operation requisite.

The crystalline lens may be forced by accidental violence directly backwards into the substance of the vitreous humour; it may be urged against the retina and choroid at any part of the interior circumference of the eye-ball. After having quitted its capsule it may push the iris forwards, gently pressing it against the retinal surface of the cornea; it may remain balanced against the floating margin of the iris, intermediate between the anterior and the posterior chambers; or it may pass through the pupil into the anterior chamber, and remain supported by the loose border of the iris. In the first form of dislocation, the irritation occasioned by the intrusion of the lens will not be very important, but the degree of violence requisite to impact it in such a situation, and the laceration of the cells of the vitreous humour, will, of course, give rise to a high degree of inflammation. If active antiphlogistic remedies and mercury be early and judiciously employed, the eye may be, to a certain extent, restored; the vitreous

and crystalline humours may be absorbed, and their place supplied by an augmented secretion of aqueous humour; or the vitreous humour may remain, and the lens assume the third or fifth form of dislocation. In the second kind of displacement it is sometimes necessary to perform an operation at a comparatively early period. When the lens is urged against the retina—when that delicate membrane, with the choroid, is compressed between the hard margin of the crystalline and the concave surface of the sclerotica—we have not merely to contend with an inflammation, the immediate effect of the blow or injury, but also a second cause, which is producing the same effect. If such a state of things exist, the patient will complain of tormenting agony; the eye-ball, the head and face, on the side of the affected organ, will be the seat of darting and throbbing pain. Iritis, and inflammation of the deeper textures, will be present; and if the eye be attentively examined, a portion of the circumference of the lens may be seen through the pupil, clearly pointing out the nature of the dislocation and the source of the patient's sufferings. If a couching-needle be now introduced through the cornea (as for keratonyxis), and the lens gently raised, or if a minute section of the cornea be made, a small hook introduced, and the lens elevated to its proper situation, every acute symptom will be instantly relieved, and the patient's advancement towards recovery be progressively rapid, with the assistance of the customary remedies for the removal of inflammation of the deep-seated textures. I object to the extraction of the lens in such cases, because it is an operation which an eye acutely inflamed is not in a fit condition to bear, and prefer relieving the urgent symptoms by this trivial operation, leaving the cataract, which is likely to remain, for subsequent treatment.

Should the lens, on deserting its capsule, urge the iris forwards against the retinal surface of the cornea, it would be desirable, as soon as the acute symptoms have been subdued (if no appearance of absorption be discovered), to pass a fine couching-needle through the sclerotica, and with very gentle motion tear it in various directions; bearing in mind, that it would be better to repeat the operation than incur the risk of exciting a high degree of inflammation by

persevering attempts to comminute the whole of the lens. I do not think extraction ought to be performed for this form of injury; because the pupil is so small, that, when the section of the cornea is completed, the lens jerks out with a degree of impetuosity which renders the risk of lacerating the iris very great. The iris, too, from its expanded condition and proximity to the cornea, is very apt to be wounded. Should the crystalline be fixed against the edge of the iris, it may either be placed in the anterior chamber by the operation of keratonyxis, or extracted. When the lens is forced into the anterior chamber by a fall, or other injury, it is generally softened and absorbed very rapidly. The treatment of this accident which I have found most beneficial, has been the following. General and local bleeding and purgative medicine, counter-irritation, and belladonna cerate to the eye-brow, on the first day of the accident; changing afterwards the purgative for calomel and opium. As soon as the hydrargyrus evidences its action upon the system, the inflammation is arrested and absorption quickened. The lens, however, may not be absorbed; and should it remain, and produce the symptoms enumerated in my last paper, its removal is not only justifiable but imperatively requisite. A lens so situated is most favourably circumstanced for the operation of extraction. I would again observe, that before this operation is undertaken, the acute symptoms ought to be subdued: it would be obviously improper to select the period of active inflammation for the performance of such an operation.

If the lens be dislocated into the anterior chamber, in consequence of chronic disease, the capsule yielding, from the extension of morbid action, to that part—if chronic inflammation of the iris and deep-seated textures be excited and maintained, by the rough and craggy surface of an ossified lens—if the capsule be wounded and the lens dislocated, by a fall or blow, in an eye previously affected with chronic iritis—or if, from any cause, a lens enlarged and indurated throughout its whole extent, be removed from its natural situation—the operation of extraction ought to be performed without delay, because there is no prospect of the removal of the lens by absorption. The inflammation will be augmented, and cannot be re-



moved whilst it (the lens) remains. There is no acute inflammation present, and by waiting, a more favourable opportunity for the performance of an operation will not be presented. The continuance of inflammation has rendered the surfaces with which the lens is in contact more sensible of its pressure; they are less capable of enduring its presence, without serious inconvenience, than when previously healthy. The opposite organ is very likely to participate in the irritation of its fellow, from having been kept for a long time in a state disposing it to suffer from a trivial cause.

The superiority of extraction, in such cases, over every other kind of operation, is very great: it excites little inflammation, removes the cataract altogether, and injures no deep-seated structure.

Birmingham, April 18, 1830.

#### A DUPLEX CHILD.

*To the Editor of the London Medical Gazette.*

SIR,

IF you think the following account of a case, which is very similar to that of the Siamese youths, worthy of insertion in your valuable journal, it is much at your service.

I am, sir,

Your constant reader

And well-wisher,

WM. MORGAN, M.R.C.S.L.

Carnarvon, 10th April, 1830.

A poor woman, the wife of W. Thomas, a quarryman, who resides near Llanberis, in this neighbourhood, was on the 28th ult. delivered of a duplex female child, still-born, which had two heads, two necks, four arms, two pelves, four thighs and legs, all perfectly and naturally formed. The two trunks were united at the breast bones, and the union extended as low as the umbilicus, where it terminated in one umbilicus common to both. Their union was so remarkably firm, that from the examination it appeared to me to be of bone; suffice it to say, that at their union I could not separate them the space of a line. From what I have already said, it must be evident that

their faces, and fore-parts of their bodies, were fronting each other. The midwife in attendance told me they were born with their arms around each others necks. From a careful external examination (for I am sorry to say I was not permitted to make any other), there appeared no reason why they should not have lived. It was evident they were of the full growth of the usual term of utero-gestation. The mother fancied they perished about a week before her accouchement. They measured in length seventeen inches and a half; I did not weigh them, but imagine them to have been about nine pounds. Their features much resembled each other, but the hair of the head of one was somewhat darker than that of the other.

[Cases of children united in a manner more or less similar to the above are not very uncommon. The following account of such an instance, in which the individuals lived, is taken from the Foreign Literary Gazette, for March 24, 1830.]

“Have you never heard of the twins that drew their breath at Szöny, near Komorn, in Hungary, anno 1701? These were two girls, who came into the world united below the spine; but otherwise forming two distinct beings, each having her own face, hands, arms, feet, &c. One went by the name of Helen, and the other by that of Judith, the former being the handsomest and finest moulded of the two. In the seventh year of their age they were sold to a physician, who gave them an opportunity of seeing Italy, France, Holland, and other countries, and at three years' end brought them back, with a booty of seventy thousand florins, (7000l. and upwards). When near their (or its?) tenth year, Augustus, the Cardinal Archbishop of Gran, placed them in the convent of Ursulines at Presburg, where they were instructed in religion, languages, lace-making, sewing, &c. They were much attached to each other, although a quarrel would occasionally spring up between them, when they would exchange fisty-cuffs, and the more robust, by way of cutting the contest short, would raise the weaker from the ground, and fairly march off with her. They could turn their heads on one side towards each other: Judith frequently slept whilst

Helen watched, or the one rested from her labour, whilst the other continued working; though it will be readily imagined, that whether they were sitting, lying down, or walking, either action was attended with much inconvenience to them. At the age of sixteen, Judith was struck with paralysis in her left side; it is true, she recovered, but her mind became duller, and her body far less active than before; Helen, in the meanwhile, continued as humorous, clever, and handsome, as ever. They had the small-pox and measles at the same time; but trivial indisposition, coughs, slight fevers, &c. would affect one of them, whilst the other enjoyed perfect health. Judith, in her twenty-second year, fell into a species of lethargy, and appeared to be dying; and Helen was simultaneously attacked by a slight fever, attended with faintings, which reduced her to such a state of debility, that scarcely three minutes before the decease of her sister, she was struggling for life; indeed, both expired nearly at the same instant, though in the perfect possession of their mental faculties.

"To this extraordinary and fully developed caprice of nature, I must add, that in March 1819, a Jewess, in the circle of Liptau, had twins with only one head, and in October 1813, a seven months' *monocephalos* was born, with two perfect faces at opposite sides of the head, the bodies being united in one, though it had double limbs and extremities. Such a *lusus naturæ* was probably the origin of the Roman Janus."

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## MEDICAL GAZETTE.

Saturday, April 24, 1830.

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"Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."—CICERO.

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### INTENDED PUBLIC DINNER.

It is intended that a public dinner shall take place on the first of next month, for the purpose of commemorating the decision of Lord Tenterden in the cause *Handey versus Henson*, by

which the general practitioner is recognised in his *professional* character. Of the importance of that decision to the public, and to every department of the medical profession, as well as to the class of practitioners more immediately interested, we have already spoken. We have declared it to be, in our humble judgment, an event calculated to induce a reform—"not such as disappointed and half frantic demagogues have raved about till the very word became a scorn—but a real and substantial reformation, honourable to the profession, advantageous to the public, and beneficial to science." Let these, which were our earliest expressions on the subject (see *Gazette*, Jan. 23), be the triumphant answer to those who would insinuate that we are hostile to the measure, or undervalue its importance, because we differ from them as to the best means of turning it to account. It is undoubtedly true that we have been opposed to the plan of celebrating this event by a dinner, and we shall explain our reasons for being so. We object to it, first, as not calculated to effect the end in view; and, secondly, we have objected to it as calculated to give the appearance of a connexion between the general practitioners and those who are justly regarded as constituting the least reputable part of our profession—a connexion which we deny to exist.

As to whether the celebration of this decision by a public dinner be likely to benefit the interests of the general practitioner, there may be, and obviously are, differences of opinion; but we have never heard any rational explanation of the advantages which are expected to result from it. It cannot be intended to make the circumstances of the case better known to the profession, for there are probably not ten practitioners in the empire who are not already fully aware of it. The decision has been mentioned in terms of commendation in

all the medical journals, of whatever political creed;—how much soever they may differ on other points, here at least all have agreed. Is the dinner, then, intended to direct the attention of *the public* to the merits of the question? Such will be its effect, whether it be the intention of those concerned or not; and it is this which, in our opinion, renders the proceeding so injudicious. The public know only that an apothecary brought an action against a patient, in order to obtain a sum of money for his attendance, as well as for his medicines, and that he succeeded in his suit. They know that the “victory” has been “shouted forth in terms hyperbolical” by a certain portion of the press, and they now see that a public dinner is to be held to celebrate the event as a triumph—over themselves. Gentlemen may talk about the decision being an advantage to the public as great, or greater, than it is to *them*—we know it; but the public do not, and will not, view it in this light, till by experience they have come to feel it as such—and the change would be much more beneficially effected by general practitioners gradually substituting charges for attendance instead of for medicine, wherever they find that they can do so with safety to themselves—rather than by a flourish of trumpets, and thus attempting to carry the measure into effect by a *coup de main*.

We remember, some years ago, the practitioners in a particular neighbourhood, thinking themselves generally underpaid, held a public meeting, and agreed to a certain rate of remuneration which they were to demand. Strong in the justice of the case and fairness of their intentions, they published the document, and circulated it among their patients. Now the consequence was, that they were nearly ruined; for there were some practitioners within reach who had not attended the meeting, and they con-

tinuing to visit on the former terms, the whole scheme, which, in their tavern orations, and in their toasts after dinner, appeared so promising—ended in smoke. Now, unless great circumspection be used on this occasion, something of a similar kind may be apprehended. Those who attend the meeting may expose themselves to the imputation of being the “doctors who charge for their attendance as well as their medicine;” a result which could scarcely be beneficial to their interests.

It is a most important crisis, and a false step may be of infinite mischief. Such, at least, is our view of the matter, and which we, therefore, think it our duty to offer—*valent quantum*.

But further: we have also said that some of those most anxious to promote this dinner were connected with the least reputable part of the profession. An anonymous writer (see *Gazette*, March 27th) is very angry at this, and says it is not true. But facts are stubborn things. We happen to know that a set of papers, requesting the signatures of those interested in these measures, and willing to contribute towards some method of making them more public, were sent from the *LANCET* office to some of the principal medical booksellers; and we also know that an attempt was made to have the name of *LAMBERT* inserted in the list of stewards. When, with these circumstances, we consider the abortive efforts made last year, by Wakley and his friends, to get up a dinner, and observe the tone assumed in the *Lancet* on this occasion, we feel fully warranted in asserting that the same party was extremely anxious to be mixed up with the present proceedings, and thus to identify its interests with those of the general practitioner. This was so apparent, that many respectable men, abundantly friendly to the general cause, held back, from a conviction that no good could come from such a source; and the dinner,



after being advertised repeatedly, was postponed, and had nearly been altogether abandoned. The few who had favoured the objectionable measures above alluded to, having become convinced, by this unequivocal demonstration of public opinion, of the absolute necessity of avoiding all party questions, if the public dinner was to be carried into effect at all, and some highly respectable gentlemen having consented to become stewards, there is now every prospect of the measure being accomplished. Such being the case—though we cannot change our opinion as to its expediency—we sincerely hope it may answer the purpose intended by those gentlemen who view it in a different light, and for this purpose the stewards ought to put Mr. Hume up to the peculiarity of the circumstances, and to take care that, in the event of any improper characters intruding, no blockhead be allowed to disturb the meeting by proposing toasts, or otherwise exciting party spirit, on an occasion where it is essential to the interests of all that the proceedings shall wear, in the public eye, the utmost appearance of cordiality, moderation, and gentlemanly feeling.

## EXTRACTS FROM JOURNALS,

### *Foreign and Domestic.*

#### NEW MEDICINAL SUBSTANCE.

THIS substance has been obtained by MM. Caventou and François, from the foot of a Brazilian tree of the family of the rubiacies, called the *caïnea* (*chiococca racemosa*), and in Bahia by the name of the *rair-prela*, or black root. The peculiar chemical principle which gives character to the extract of this root, has tonic, without exciting, properties. It slightly purges, and is very diuretic. Its mode of action on the urinary passages is remarkable; the first day it very little augments the quantity of urine evacuated, but on continuing to administer it, the effect is progressively increased from day to day. As the augmentation of action is slow, no un-

due irritation is produced; and in consequence, the administration of this body as a medicine has never produced more favourable effects than in those cases where the urine, red and irritating, has been rendered with much pain.

The extract of the root being tonic, purgative, and diuretic, it is evidently applicable in cases of dropsy, and very favourable results have been obtained in several instances of this kind.—*Bull. Univ. C.* xix. 333.

#### EFFICACY OF OPIATE ENEMATA IN DELIRIUM FROM WOUNDS, &c.

Delirium without fever, or cerebral alteration, is a frequent consequence of great operations, wounds, &c. It is characterized by an extraordinary loquacity, complete incoherence, and continual movements, which are not prevented by the pain that naturally accompanies the lesion under which the patient may labour. Thus those having comminuted fractures of the lower extremities have been known to tear off the bandages, and to walk on the broken limb, without testifying the least pain; and others who had been operated upon for hernia, to thrust their fingers into the wound, and amuse themselves with pulling out their bowels, just as if they were doing so on a dead body. This state of exaltation of the nervous system may lead to the most unpleasant or fatal consequences, if not combated by proper remedies. The treatment which M. Dupuytren has found most efficient, is an opiate injection. A purgative enema is first thrown up, to empty the large intestines; after which the narcotic is administered. Fifteen or twenty drops of liquid laudanum are in general sufficient. But it is very important in the use of this remedy, that it should remain three or four hours in the rectum. Under these circumstances, the moderate dose above-mentioned is sufficient; whereas much larger quantities of laudanum, if they have been speedily ejected again, have been of no service. M. Dupuytren is of opinion, not only that fifteen or twenty drops are sufficient, but that, in these cases, the medicine acts more beneficially in the form of clyster than when taken by the mouth.—*Journal Hebdomadaire.*

#### AN ACCOUNT OF THE GIRAFFE, WHICH LATELY DIED AT SAND-PIT GATE.

By Mr. W. J. GOODWIN, V. S. to the King.

The attention of British naturalists

has of late been particularly directed to the giraffe, from the recent death of one of these animals in the King's menagerie. It was brought to England in August 1827, and was then about a year and a half old, and it died at Sandpit gate in October 1829.

It was evident, on its first arrival, that there was considerable disease in several of its joints. The knee, the fetlock and the hock, were swollen and distorted, and the peculiar gait of the animal was more than usually awkward. Inflammation had plainly attacked the synovial membrane of these joints, the cause of which had doubtless commenced while the poor beast was fettered and bound on a camel's back, being too young to travel. The journey overland was, however, performed by the giraffe now in Paris without injury, for it was a twelvemonth older than that which was presented to his Majesty.

This disease of the joints continued to increase in spite of the most careful treatment, and, at length, rendered every movement of the animal exceedingly painful. For several months before it died the limbs became powerless; and it was requisite to support it in the erect position by a sling, to the use of which it became perfectly reconciled.

The inflammation proceeded to ulceration of the synovial membrane and cartilages, and which extended deeply into the bones of several of the larger joints; and this interesting animal died worn out with pain, the excruciating nature of which was sufficiently obvious on the post-mortem examination of the joints.

The giraffe belongs to the class *mammalia*, and the order *ruminantia*: it bears some resemblance to many species of this order, but it is distinguished from all of them by several striking peculiarities. It resembles the camel in the length of the neck; in the callous substances found on the breast and knees; in the construction of the feet, which have no false or supplementary hoofs; and in the height of its stature. This resemblance had been noticed by the Romans, by whom it was called the *camelopardalis*, the camel spotted like a pard.

It, however, resembles still more some of the species of *deer*, in the apparent rudiments of horns, covered by the integuments, hairy, and crowned with a tuft of bristles, which may al-

most be fancied to be the development of the horns; in the general shape and character of the head; and in the large soft eye with elongated pupil. The eye of the poor animal that died at Sandpit was the admiration of every one, and its countenance truly indicated its gentle and inoffensive character. The general form of the body, the obliquity of the back, and the slenderness of the legs, remind us of some of the deer tribe. It has, however, characters not recognized in the camel or the deer. On the forehead is a large tuberculous projection of bone, lengthened towards the nose, and the nasal bones are singularly prolonged, almost to deformity. The muzzle and lips are those of the horse, rather than the camel or deer: the principal peculiarities of its conformation are the length of its forelegs, the elevation of its withers, and the extent of its neck, which are out of all proportion to the other parts. Some are said to have been no less than twenty feet high, from the crown of the head to the sole. The larger one in the British Museum measures seventeen feet in height. His Majesty's was not more than twelve feet high; but it was young when brought into this country, its growth was stunted by constant disease, and the distortion of its limbs materially lessened its apparent stature.

The natural motion of the giraffe is a kind of amble, with the neck extended, and the animal, as may be imagined from his form, is far from being swift. Progression depends chiefly on the hinder quarters, which are singularly short and deficient in this animal. The nostril narrow, compared with the bulk of the animal, and the lengthened windpipe, are incompatible with speed.

The natural food of the animal is pointed out by his form. Although the neck is of great length, the height of the fore-quarters prevents the possibility of his reaching the ground with his muzzle, and therefore he browses on the leaves and succulent branches of trees. The Sandpit giraffe was chiefly fed on barley, hay, and the shoots and branches of the acacia tree, and other species of the mimosa. It preferred almost every species of green food to that which was dry, and ate it with avidity. Its little appetite for water seemed to fit it for the arid country whence it came. It consumed about two quarts only daily. At times it would not drink

for a day or two, and afterwards would eagerly swallow a larger quantity.

The thoracic and abdominal viscera were carefully examined, and closely resembled those of the deer. The liver was rather small, divided into two principal lobes, and without a gall-bladder, but the biliary duct was very large. A description of the tongue and the stomachs, with accurate drawings, will be published by Sir Everard Home.

The length of the intestines was 156 feet, seventy of which were occupied by the colon, cæcum, and rectum: the two former had none of the longitudinal bands, puckering them into numerous cells, as in the horse, nor were they so capacious as in that animal; but the colon diminishing in size, and formed several circular convolutions on the left side of the abdomen.

The skin has been admirably preserved and stuffed by Mr. Gould, of the Zoological Society. The skeleton also is in a state of forwardness, and will be the only perfect one in this country. When completed I shall probably resume my description of this rare animal.—*Veterinarian*.

#### BUCCINA—NEW PRINCIPLE IN BOX-WOOD.

An apothecary of Bordeaux announced to the Pharmaceutical Society of Paris, at its last sitting, that he had discovered in the wood, and particularly in the bark, of the box-tree, an alkaline principle, to which he gives the name of *buccina*. It is in the form of powder, and neutralizes acids, forming uncrystallizable salts: it has a very strong sudorific action and bitter taste. M. Dupetit Thouars, in making this statement at the Philomathic Society, remarked, that *buccina* might perhaps be advantageously used in the manufacture of beer, "for there is more box-wood than hops employed in making almost all the beer brewed in Paris."—*N. M. Mag.* xxx. 112.

## HOSPITAL REPORTS.

### HOTEL DIEU.

#### *Foreign Body in the Air-Passages— Tracheotomy—Observations.*

A LITTLE girl, eight years of age, sent on a message by her mother, was

tempted by the appearance of a haricot-bean in a shop, and having stolen it, put it into her mouth for the purpose of concealment. This was done in a great hurry, and as she made a deep inspiration at the moment, the bean was carried into the larynx, and subsequently passed into the trachea, where it remained. Violent cough instantly came on, and was accompanied by a sense of impending suffocation. The accident happened on the 3d February. Several practitioners were called, and an emetic was prescribed: this produced copious vomiting, but without getting rid of the foreign body. The rest of the day was passed in alternations of fits of suffocation with intervals of quiet. On the 12th, M. Delens, under whose care she was, sent her to the Hotel Dieu. The night between the 12th and 13th was very restless, the fits of choking being very violent, and frequently followed by long-continued loss of consciousness, which led to serious apprehensions of her death. Next morning the cough was still very severe: on applying the ear on the windpipe, a peculiar noise was heard, and the *shock* of the foreign body perceived on breathing.

The necessity of removing the bean was obvious, and M. Dupuytren determined on performing tracheotomy. This was done accordingly on the 13th (February), in the following manner:—A few moments before commencing the operation, the shock of the foreign body against the parietes of the air-tube was felt for, but it was scarcely to be perceived just at this time,—a point to which we shall return. The child placed on a bed, and held by assistants, the head being thrown back, an incision was made about an inch and a quarter in length on the median line, and a little above the upper end of the sternum. At first the skin only was divided, then the subcutaneous cellular tissue—this last being done with great precaution: arrived at the muscles, these were separated, and the trachea in this manner was reached without any vessel, arterial or venous, having been divided. M. Dupuytren then, by means of a straight and sharp bistoury, guided by the nail of the fore finger of the left hand, divided vertically several rings of the windpipe, with their connecting membrane. At first no air made its escape, nor was the voice at all altered, which



much surprised the operator and his assistants; but the incision being a little extended at both extremities, and held apart with the point of a forceps, air issued from the opening. The head of the child being now moderately flexed, the air was expelled with greater force, and after some violent efforts at expiration, the bean, covered with bloody mucus, was ejected, and fell on the child's breast. The respiration then returned to its natural state, the cough and suffocation ceased, and the little patient appeared to be well. The edges of the wound were carefully wiped, so as to remove all the blood which covered them. They were not brought together, but a simple compress of linen, pierced with holes, and spread with cerate, was laid on the front of the neck: no charpie was used. A bandage of very moderate tightness kept the dressing in its place. The haricot was more than five lines in length, three in breadth, and as much in thickness. It was a little swelled.

In the evening there was a smart attack of fever, for which she was bled. The night was pretty good.

14th.—The air passes freely by the wound, and respiration seems to be almost entirely performed through the adventitious opening. There is some pain in the larynx, with occasional fits of difficult breathing. Fifteen leeches to the throat; diluent drinks. The leeches bled freely, and produced permanent relief. The cough became less frequent, and there was little fever.

15th, 16th, 17th.—Respiration free; a little hissing is heard at the wound, by which the air now only issues in small quantity. Voice natural.

20th.—The edges of the wound have been approximated, there being no longer any danger of emphysema.

From this time no accident of any kind occurred to the little patient. In a few days more she was removed by her parents, who brought her back a month after to shew the state of the wound. There was then only a very minute aperture left, and as it was gradually diminishing, it was expected that it would soon close entirely.

*Observations.*—The above case offers several interesting considerations:—

1st, With regard to the position in which the child was placed in order to

divide the external parts and trachea most favourably, and then with regard to that afterwards assumed to admit of the exit of the foreign body. For the former purpose the throwing back of the head is very convenient, and renders the first steps of the operation very simple; but for the escape of air, and, *à fortiori*, for giving exit to the foreign body, it is unfavourable. And in fact, it will be observed, that the incision first made in the trachea did not suffice for either purpose. This, perhaps, was partly owing to the smallness of its size, but it was also in part dependent on the posture; for the extension of the head stretches the borders of such a wound, and thus keeps them from separating. But when the head is bent forwards, the reverse of this happens, and it was during this latter period that the foreign body was thrown out. From this it follows as a useful maxim in such cases, to have the head extended in making the incisions, and flexed afterwards to open the wound. There is another point to which it may be useful to allude. There exists between the sternothyroidei and sterno-hyoidei muscles and the anterior part of the trachea a space filled with cellular tissue, which is loose, and forms a kind of cavity. When the instrument arrives here, if it does not penetrate at once into the windpipe, it may be thrown into a wrong direction in this cavity, and lead to difficulty. Being aware of the circumstance, this is easily guarded against by a little attention.

2d, We would direct attention to one of the signs characteristic of a foreign body in the windpipe; namely, the shock it communicates to that tube: this is a sensation which can be perceived by the ear, or even felt by the hand. It is not, however, always equally distinct in different individuals, nor indeed at all times in the same case. In fact, the body may become adherent, and consequently it may not be impinged, by the act of breathing, against the windpipe, or else being enveloped in an abundance of thick mucus, the shock it produces may be too slight to be perceived. Accordingly, we have seen that in the above case, although distinct at the time of the patient's admission, it was much less so when the operation came to be performed. This sign was particularly pointed out by M. Dupuytren, and we

have not noticed it in any other author. It may obviously be useful in the diagnosis of obscure cases.

3d, The mode of dressing which was adopted also deserves attention. The edges of the wound were not at first approximated, for fear of bringing on emphysema. At first the cellular tissue would have been permeable, and would probably have afforded a ready passage to the air. But at the end of some days, glued by the inflammation, and rendered compact, this was no longer possible, so that the healing of the wound could with safety be hastened by the approximation of its edges. The propriety of this practice is too obvious to require that we should enlarge upon it. We may also remark, that no charpie was employed; experience has shewn that it sometimes finds its way into the trachea, giving rise to very troublesome effects.

*Foreign Body at the upper part of the Larynx—Extraction.*

A woman, aged from 45 to 50, presented herself for consultation at the Hotel Dieu on the 30th of March, requiring assistance for an accident which had happened to her eight or ten days before. In eating some fish she had swallowed a bone, and immediately afterwards was seized with pain in the neck, and in the situation of the upper part of the larynx;—this continued, and was felt not only in swallowing, but breathing. The pain, which at first was only inconvenient, became more and more acute, and it was to get cured of this that she came to the Hotel Dieu. The patient having the mouth widely opened, and submitting in other respects extremely well to the necessary manipulations, M. Dupuytren introduced his finger along the base of the tongue to the epiglottis, which he particularly examined all round. He felt, near its base and at the outer edge, a projection about the size of the head of a large pin; the rest of the body, the nature of which he could not determine, but which, from the account of the patient, he suspected to be a fish-bone, was situated within the epiglottis. M. Dupuytren having the fore finger of one hand resting on the projection made by the foreign body, introduced along it a forceps, with which he seized the projecting part.

Certain that he had hold of it, as the handles of the instrument did not touch when they were brought together, he pulled gently, and drew out a fish-bone an inch and a quarter in length. This was effected with little pain and no bleeding, and probably the patient experienced no further inconvenience, as she did not return to the hospital for further advice.

This fact is only one of many others of the introduction and detention of foreign bodies in the air passages; but it is remarkable, in so far as the bone was fixed in the sides of the larynx and across its upper extremity. It is also curious, that the irritation, in general so violent when foreign bodies find their way into the air passages, was here so inconsiderable that the patient was but little incommoded for eight or ten days. It illustrates the extreme difference in the sensibility of the same organs in different individuals.

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EDINBURGH ROYAL INFIRMARY.

*Necrosis of Femur—Amputation—Secondary Hæmorrhage—Ligature of the Common Iliac Artery.*

ROBERT PEDDIE, æt. 8, admitted under the care of Mr. Liston, Nov 6th.

There is considerable swelling of the right thigh, extending from the trochanter major to the knee, arising from enlargement of the femur, which is increased in size chiefly towards its lower extremity. About four inches above the knee there are two fistulous openings, one on the outside, the other on the inner side of the limb. A probe was introduced obliquely upwards from each of the apertures for upwards of two inches, and a large portion of the bone was found denuded, but no loose portion could be felt. The affected limb appears a little elongated, with slight flattening of the hip; but the rotatory motions of the thigh are perfect, and performed without pain. The patient is considerably emaciated, has night sweats, and slight thirst, but a good appetite, and no diarrhœa. Pulse 112, and irregular; tongue clean and moist.

The swelling of the thigh occurred twelve months ago, after a severe fall on the ice. The opening formed some months previous to admission.

23d.—The limb was removed yesterday immediately below the trochanter minor, by the anterior and posterior flap operation,

Mr. Liston having previously satisfied himself that the hip-joint was free of disease. The bone, where sawn, was considerably thickened, but otherwise free of disease. Ten arteries were secured, and the flaps retained by interrupted suture.

Mr. Liston's prognosis was rather favourable, and he was of opinion that the remaining bone, being merely enlarged, would soon diminish in size after the removal of the irritating cause.

On exposing the diseased bone, it was found very much enlarged by the deposition of new osseous matter, and a large external sequestrum was situated on its posterior surface, detached at its upper extremity, but firmly fixed towards the knee. The periosteum was thickened and vascular, and the surrounding parts were of semicartilaginous consistence.

Soon after the patient had been put to bed, he was seized with violent vomiting; anodyne draughts and solid opium were administered, but were speedily ejected; brandy was given frequently, and in small quantities, and had the effect of in some degree abating the violence of the vomiting.

24th.—Passed a restless night, and the vomiting occasionally recurred. Pulse rapid and weak; feet cold. A sinapism to be applied to the epigastrium, and wine to be administered.

26th.—The vomiting has almost subsided; pulse less rapid and more full; stump looking well; bowels regular.

27th.—The vomiting has entirely ceased. The patient has a cough, with considerable thirst, and complains of slight pain of the abdomen, somewhat increased by pressure; his bowels have been freely moved; stump discharging dark-colored matter; pulse 140, and of better strength; urine scanty and high colored; feet rather cold.

28th.—Has still cough, with slight pain of breast. A sinapism was applied to the chest, and an anodyne draught administered. Ordered  $\mathfrak{v}$ ij. of wine.

30th.—The cough is trifling, and he has no pain of breast; pulse 120, and of good strength; the stump looks well, and discharges a considerable quantity of healthy purulent matter; tongue moist; bowels open.

1st Dec.—Soon after the visit yesterday there was some oozing of blood from the stump, and during the afternoon it increased in quantity. The hæmorrhage was found to proceed from an ulcerated cavity of considerable size, opening towards the outer angle of the wound; a coagulum was removed with the finger, and the cavity stuffed with lint. The hæmorrhage was arrested at the time, but soon returned, became more profuse, and could not be stopped by the usual applications.

At 9 p.m. was visited by Mr. Liston, who

proceeded to secure the common iliac artery. He commenced the incision about an inch above the anterior superior spinous process of the ilium, and two inches towards the mesial line, and continued it for upwards of three inches to over the internal ring. The transversalis muscle and fascia were divided on the finger, and the peritoneum was carefully separated from its attachments from below upwards, and pulled gently upwards and towards the opposite side, by the hands of the assistant. The ligature was applied by means of a common aneurism needle, and the edges of the wound were brought together by a few points of suture.

Mr. Liston stated that he had felt it to be his duty to secure this large vessel, in consequence of the severity of the hæmorrhage, and the exhausted state of the patient, though the chances of recovery were but slight.

After having been put to bed, the patient remained composed for a considerable time; but violent vomiting afterwards occurred, and brandy and opium were again administered.

The vomiting still continues; he is restless, and complains of pain in the epigastrium, increased by pressure; pulse 150, of tolerable strength. A small sinapism has been applied to the epigastrium. Afterwards the vomiting became much less frequent, and the brandy was continued; but towards evening his pulse became weak, he lay in a state of stupor, talked incoherently, occasionally screamed, and was affected with slight convulsive twitches. At 7 p.m. the pulse was imperceptible. From five to six ounces of blood were transfused into the basilic vein of the right arm. After the operation of transfusion, the breathing became a little more hurried than previously, the skin was warmer, and the pulsation of the radial artery was quite distinct, and gradually became stronger, being about 140 in the minute.

He afterwards appeared to rally for about an hour, after which he again sunk, and died; about an hour and a half after the operation of transfusion, and upwards of 24 hours after the ligature of the common femoral artery.

On examining the body, the ligature was found applied to the common iliac, about half an inch above its bifurcation, and surrounded by a considerable quantity of effused lymph; there was a small coagulum above its constricted point. The extremity of the superficial femoral artery was quite imperious. The hip joint articulation was perfectly natural.



## ST. THOMAS'S HOSPITAL.

*Spontaneous (?) Gangrene of the Left Foot—Separation of the Foot by the Natural Process.*

JOHN HERRIS, aged 32, admitted on the 25th of February into Henry's Ward, No. 1, under the care of Mr. Travers. The patient says, that about a week ago he was suddenly seized with a numbness of the whole of the left foot, which was soon followed by a discolouration of the skin, presenting a dark brown appearance. His occupation being that of a coal porter, and at this time being out of employment, and having an ulcer on the right leg, he was giving the limb rest when he perceived the above affection of the foot come on. It should be observed, however, that as soon as he found the numbness attack his foot, he immediately put it into warm water; and it was not until then that the discolouration showed itself. Having remained in this state for the space of a week, he was then taken to the City Workhouse at Stepney, where he had a cold lotion applied to the foot; this took place on a Tuesday, and on the following Thursday he was brought to this hospital. When we first saw him, which was not until the day after admission, the integuments of the left foot presented a livid black appearance, the discolouration extending about two inches above the ankle joint; vesicles, containing fluid, were here and there seen. No distinct line of demarcation, separating the living from the dead part, was yet discernible; the discolouration was insensibly lost in the adjacent living structure. He complained of slight pain in the ankle joint, and all sensibility below it was entirely absent. Pulse quick, with moderate power; tongue clean; bowels constipated. On the lower and inner side of the right leg he had a large, indolent, and unhealthy-looking ulcer, which he said first originated from a scald about six years ago. He was ordered to take a colocynth and calomel pill immediately, and house medicine occasionally; two grains of sulphate of quinine in infusion of roses three times a day; and half a pint of port wine daily, with a mutton chop: as a local application to the foot, equal parts of linseed oil and oil of turpentine; linseed meal poultice to the ulcer. Nothing different from the above state was observable, with the exception that the mortification did not continue to extend farther up the leg, until the 1st of March, when the line of circumvallation around the gangrene was perfectly formed, and the process of spontaneous amputation beautifully developed. It had a white appearance, consisting of raised cuticle, with a depression in the centre forming a groove, so that one half of the line was attached to the dead, whilst the other was devoted to the living side, with a slight blush of inflammation in the immediate neighbouring integu-

ments. The sensation in the part now became somewhat more acute; his tongue continued clean; bowels kept regular from house medicine; and general health good, being able to eat, drink, and sleep tolerably well. The same applications were continued as ordered at the first, until the 11th, when the oil and turpentine were omitted, and a lotion of chloride of lime substituted. The process of separation was going on favourably, and the patient in as good health as might be expected. On the 24th ultimo, he was directed to have the foot enveloped in a poultice, and instead of the chloride of lime wash, to have the part at the point of disunion wetted with a lotion of nitric acid, the strength of the solution being ten drops of the dilute acid to an ounce of water.

April 12th.—The foot had been for some time suspended only by the flexor tendons; and on the 10th it was entirely removed, and healthy granulations appeared on the stump. The leg was ordered to be strapped from the knee downwards, and other strips to cross the stump, and afterwards a roller applied.

He continues to do well.

*Case of Otitis, with discharge, terminating in the formation of abscesses within the head.*

Edgar Barton, 24 years of age, was admitted into William's ward on the 11th of December last with a swelling on the left side of the head, particularly above the ear. A sense of fluctuation could be perceived, but it was somewhat obscure; however a puncture was made, and a small quantity of matter evacuated, which was rather offensive; after which he expressed himself much relieved. A poultice was ordered to be applied to the part, and he took some of the saline mixture every six hours, with ten grains of the compound powder of ipecacuanha every night at bed time. This took place on the 13th; previous to which time no symptoms occurred except severe pain in the region of the swelling, and some discharge from the ear, which he said had not existed more than a fortnight altogether. On the evening following that on which the swelling was opened, he became restless, and during the night was delirious, in which state we found him the following day, so that it had been thought necessary to secure him to the bed with straps. His skin was hot and dry; tongue brown and furred; pulse upwards of 100, hard and full; and he was constantly endeavouring to remove the poultices. With respect to the chief seat of his pain, when questioned, he could not answer intelligibly, but pointed to the part that had been punctured. Fluctuation was now more evident, and an incision was made, through which there escaped about an ounce of offensive pus. Sixteen ounces of blood were taken from the arm; and a small artery being

divided on making the incision into the swelling, about three ounces of blood escaped from this source, when it was stopped by pressure. After the loss of blood he appeared to find relief almost immediately, and became more tranquil; still, however, remained delirious. Towards the evening the febrile symptoms had increased; his pulse was 120 and hard; bowels not yet open. He was then bled to ten ounces, and a dose of house physic administered to him. On the following morning he appeared less restless, but still remained unconscious of what was going on around him. There was no discharge from the wound, but a good deal from the ears. Bowels freely open. About three o'clock in the evening he was seized with a convulsive fit, which lasted upwards of a quarter of an hour; and was followed by another, of a similar nature, a little after 7. From this time he continued to sink rapidly, and between 9 and 10 he expired.

When his mother was examined as to his previous condition, she stated that he had been the subject of discharge from his ear from infancy, and within the last few years it had been constantly attended with a disagreeable smell. During this time he experienced considerable pain in his head; indeed so much so that at times he was quite frantic; and in addition to the discharge from the ear there was occasionally an escape of blood. Within the last fortnight he has scarcely ever been free from pain; and it was only at this time that they had first perceived the external swelling.

*Inspectio Cadaveris.*—On examination of the head externally, the periosteum was found denuded from the squamous plate of the temporal bone, nearly two inches in diameter, while the temporal muscle was in a sloughy state. On opening the cranium a circumscribed abscess was found between the dura mater and bone, corresponding to that which was situated externally: this contained upwards of half an ounce of unhealthy looking pus, having an offensive smell. The middle cerebral lobe corresponding to this was of a green colour, and softer than natural: when cut into, an abscess was found, about the size of a hen's egg, containing fetid pus. The posterior lobe on the opposite side was also cut into, and gave exit to a quantity of pus; and on continuing the examination after the brain had been hardened by alcohol and a horizontal section, made so as to expose the lateral ventricles, a communication was found between the abscess and neighbouring ventricle. On inspection of the ear, the meatus auditorius externus shewed long fungous granulations, arising from the membrana tympani; but a minute examination did not detect a communication between the external ear and the abscess between the dura mater and skull.

## GUY'S HOSPITAL.

### *Large malignant Tumor of the Groin—Operation for its Removal.*

CORNELIUS SULLIVAN, an Irish labourer of rather an unhealthy aspect, was admitted into the hospital on the 24th of February, with a large malignant tumor situated in the left groin. The patient states, that it first made its appearance about five years ago, at which time he received an injury of the great toe on that side from a blow; this produced a separation of the nail. Soon after the accident he perceived a swelling in the groin, but which was unattended with pain, and continued to be so until about two years since, when the pain was at times considerable. The tumor now presents an irregular appearance, bulging out at different parts, and is firm to the touch. When an indentation is made by pressure, it instantly springs up again. The integuments are smooth, and slightly livid, without ulceration. Two large arteries can be felt pulsating on the outer side, passing from the thigh to the tumor, and one on the inner side, proceeding from the pubes. It is intimately connected with the fascia covering the muscles on the upper and inner part of the thigh. On taking the measurement of the swelling, the girth of the substance was twenty-one inches; and around the pedicle, by which it was suspended, about fourteen inches; from this point, namely, where it was attached to the groin, to the opposite point underneath, crossing the tumor, sixteen inches. On lifting it up with the hand, the weight did not appear to be so great as might have been imagined from its dimensions. He did not complain of pain, except across the upper part, which is marked by a groove about two fingers width, passing from side to side, where it is also tender on pressure.

This case excited a good deal of interest among the pupils, as it was reported that the man had made application to several eminent surgeons, who refused to extirpate the tumor, on account of its being so closely connected with the parietes of the abdomen.—On questioning the patient at the time of admission, he stated that he had applied to different surgeons, who advised him to seek advice at this hospital.

On Tuesday the 2d of March the operation was performed for its removal by Mr. B. Cooper. The patient was placed upon the table, and the operator commenced by making his first incision on the left side of the tumor, beginning at the upper part, and carrying it round to the opposite point underneath the swelling. Although the incision was superficial, three arteries immediately began to bleed very freely, but were stopped by Sir Astley Cooper and Mr. Callaway making pressure on the mouths of the ves-

sels, and on the femoral artery, where it passes over the bone. A similar incision was next effected on the opposite side, and the dissection of the tumor continued, so that it was removed in about five minutes. Considerable hæmorrhage followed each stroke of the knife, which was arrested as much as possible by the assistants making pressure with their fingers. Pressure was also kept up on the femoral vein, as a good deal of venous blood escaped during the operation. Immediately after the removal of the tumor eight vessels were secured, and the edges of the wound brought together by sutures and strips of adhesive plaister, and a compress and roller applied, so as to keep up slight pressure on the part; a roller was also applied round the thighs, to keep them in a state of adduction.

The morbid structure presented a medullary appearance, so soft and pulpy that the finger could be thrust into it with great ease. It weighed between six and seven pounds. On the day after the operation the patient complained of slight uneasiness in the wound, and of more considerable pain on the left side of the abdomen, which was increased by pressure; skin hot and dry; tongue moist and white, but not coated; pulse quick.

Ordered a grain and a half of calomel, and quarter of a grain of tartarized antimony, to be taken immediately; effervescing saline mixture every four hours.

4th.—Pain increased on the left side of the abdomen, with acute tenderness on pressure. Pulse 108, small, but not sharp or hard; skin hot, rather dry; has been restless during the night, with little sleep; does not complain of pain in the wound; tongue as yesterday; spirits depressed; says he is naturally of a timid habit. At times he feels sick, and rejects whatever is taken into his stomach immediately after; scrotum is a good deal swollen, and painful; bowels opened by means of castor oil: towards the evening he had a dose of calomel and opium.

5th.—Pulse 104, more ample, and inclined to jerking; less pain and tenderness in the abdomen, and free from pain in the wound; several motions yesterday; tongue somewhat coated, but moist; has slept a little during the night; skin hot and dry; complains of pain in the head, and the sickness at stomach continues; scrotum as yesterday; a linseed meal poultice is applied to it. Mr. Cooper now directed the roller and pledget of lint to be removed, but the strapping underneath these to be left as before.

Ordered a grain of calomel, half a grain of opium, and two grains of antimonial powder, every four hours; also an effervescing draught, with camphor mixture, and three minims of black drop in each dose.

6th.—The remainder of the dressing has been removed to-day. The wound looks quite healthy, and his countenance has improved.

Omit the pills and continue the effervescing draught; to have four ounces of wine daily with his low diet.

10th.—Some of the sutures were divided yesterday, and the remainder to-day; healthy granulations appear between the edges of the skin. On the 8th a sloughing commenced in the scrotum. Yesterday a poultice of bread and water was applied to the wound, and he took twenty-five drops of tincture of opium at night.

17th. Going on well; the sore on the scrotum much cleaner. His allowance of diet has been increased, consisting of fish and eggs, and he is now ordered some veal.

April 1st. The wound is quite cicatrized, except at one point, where the only remaining ligature comes out. The scrotum is quite well, and the patient's general health very good; appearance considerably improved.

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#### PRIZE MEDAL OF THE HUNTERIAN SOCIETY.

WE are requested to say that competition for the above is not limited to members.

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#### BOOKS RECEIVED FOR REVIEW.

Mr. Alcock's Lectures, with Coloured Plates.

Addresses delivered on various Public Occasions, by John D. Godman, M.D.

Surgical Observations on the more important Diseases of the Mucous Canals of the Body. By George Macilwain.

Remarks on Pulmonary Consumption. By James Jenkins.

Observations and Cases relative to Dislocations of the Shoulder-Joint. By R. Roberts.

A Dissertation on Heat and Humidity. By James Murray, M.D.

An Exposure of the Causes of the present deteriorated Condition of Health, &c. By Joel Pinney, Esq.

A Letter, &c. on the Nature and Properties of the Aluminous Chalybeate Water, at Sand Rocks, Isle of Wight. By T. L. Waterworth.

A Clinical Report of the Royal Dispensary for Diseases of the Ear. By John Harrison Curtis, Esq.

Observations on the Functional Disorders of the Kidneys, which give rise to the Formation of Urinary Calculi. By William England, M.D.



# THE LONDON MEDICAL GAZETTE,

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SATURDAY, APRIL 24, 1830.

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## LECTURES ON SURGERY,

*Delivered at St. Bartholomew's Hospital,*

By WILLIAM LAWRENCE, F.R.S.

— *from 104.*

### LECTURE XXXIII.

*Tumors continued—Encysted Tumors—Ganglions—Diseases of the Skin.*

In the last lecture, gentlemen, I spoke to you of tumors without concluding the observations which I had to offer upon that subject. I described to you a kind of growth which seems to consist of something very analogous to the cellular substance—the common cellular tumor. I spoke to you also of the adipose or fatty tumor, and of a morbid growth, corresponding to the description which is given by Mr. Abernethy, of what he calls pancreatic sarcoma; and also of another, under the head of tuberculated sarcoma.

In the case of cancer and fungus hæmatodes, we frequently find that these growths occur in the cellular substance as original depositions or newly-formed parts, and under such circumstances they would correspond with the definition of a tumor which I gave you in my last lecture, that is, of a new production occurring in the interior of any particular organ or part of the body which constituted no portion of the original fabric. The fungoid tumors are classed by Mr. Abernethy under the head of medullary sarcoma. He has given them the name of medullary from the softness of texture by which they are characterized; and he mentions cancer under the head of carcinomatous sarcoma. Now I have already spoken of these under the head of *specific diseases*, and therefore there is no occasion again to revert to the subject under the present division.

You may meet with tumors which do not in point of structure exactly correspond with

any of the descriptions that I have pointed out to you. There is a great diversity observed in the structure of these morbid growths, and I do not know that the whole of them can be considered to be comprehended under the various species that I have spoken of; the truth, however, is, that the distinction of tumors, grounded on the anatomical structure, is more important pathologically than practically. Generally speaking, we cannot ascertain the precise anatomical structure of the tumor till it is removed from the body, so that the anatomical structure is in general no guide to the course we adopt in the treatment of the case. I may, however, say to you in general in respect to these fleshy tumors, or sarcomatous growths, that if a lump of that kind form in any part of the body, if it is increasing considerably, if it produce conspicuous deformity, if it is inconvenient to the person from any cause, you may remove it by the knife whatever its structure may be. It is of no great practical importance, therefore, to distinguish very accurately the precise species of the morbid growth according to the anatomical structure, when you can have in point of practice only one course to pursue in the treatment of the case.

#### *Encysted Tumors.*

I come then to speak to you next of what we call technically *encysted tumors*. Cysts, which are constituted of a kind of membranous bag, may form in any organ or other texture of the body. These cavities or cysts are filled with contents of different kinds, varying in consistence from a watery fluid to a thick kind of fat. I say they may form in any texture or in any organ of the body; I believe we can hardly say that any kind of structure is exempt from them, except it may be the cartilaginous: I do not know any examples of the existence of cysts in them. But the osseous structure is not exempt. Cysts are formed in bones, although you might have supposed that the hard structure of these or-

gans would effectually prevent the development of any thing like membranous cysts. There is a curious case related by Mr. Keate, in the tenth volume of the Medical and Chirurgical Transactions, where a number of watery cysts were formed between the two tables of the frontal bone, constituting a tumor, the growth of which attained considerable size, and which, at last, by its connexion with the neighbouring parts within the cavity of the skull, produced very unpleasant symptoms, so that it became necessary to take away a part of the external table of the skull, and remove these morbid growths. Considerable difficulty was experienced in getting rid of the disease, which seemed to extend in circumference in proportion as it was destroyed in the original part, but ultimately it was completely extirpated, and appeared to consist of thin membranous cysts containing water.

Now it is not my present purpose to describe to you generally cysts as they occur all over the body; my object is only to speak to you of encysted tumors, considered surgically. We have, in fact, nothing to do with the cysts of various kinds that may be developed in the internal organs of the body. The very existence of these is not known till after death, and therefore it is a matter of no practical consequence. The encysted tumors to which I wish to direct your attention, are those which form on the external surface of the body immediately under the skin, or at least in the integuments. These are swellings which, in popular language, are called *wens*, and which the French have designated by the term *loupe*: they consist of cysts forming in the integument, and seated generally immediately under the skin, and are consequently developed in the stratum of adipose substance which lies immediately under it; and very commonly you will find that the skin adheres firmly to the convexity of the cyst where it approaches to the surface of the body. The cysts themselves are various in point of thickness. There are thick and thin cysts; there are cysts which are soft and delicate in point of structure, and others that are firmer, approaching nearly to a cartilaginous texture. The interior of these cysts is very generally smooth, and in fact presents an appearance a good deal like that of cuticle. Here are some specimens [exhibiting them] of some of these cysts. This cyst is divided, and turned inside out, to show the smooth cuticular lining. Here we have a number of cysts all taken from one individual.

The cyst or bag sometimes adheres firmly to the part which surrounds it—sometimes is connected more loosely. Different names have been given to these cysts or encysted tumors, derived from the nature of the substance which they contain: thus you will find the technical division of them in the old

writers. To a certain description the name of *Meliceris* has been applied, the substance in these resembling honey in consistence and colour. *Atheroma* is a name given to another set, which contain a soft substance in appearance a good deal like pap or poultice. A very great proportion of these tumors contain fat, either pretty liquid or solid, and this is called *Steatoma*. These are the three principal descriptions of tumor, which the old writers, according to their contents, have called *meliceris*, *atheroma*, and *steatoma*.

The appellation *steatomatous*, which means fatty tumor, has been sometimes applied to solid parts of fatty structure: it is not always confined to a particular kind of encysted tumor or wen. We sometimes find described under that term an adipose tumor of a solid consistence. These, however, are not the whole; they do not constitute the whole of the particular sort of contents that we meet with in encysted tumors. You sometimes have a liquid matter considerably more fluid than the contents of the melicerous tumor. I lately removed a large encysted tumor from the back of the neck of a lady, and it contained fluid which in appearance was much like turbid porter, with some portions of a granulated substance floating in it. Sometimes encysted tumors contain hydatids, and in fact there is a considerable variety in point of consistence and nature in the contents of these bags. Sir Astley Cooper observed in examining some wens or encysted tumors, that on that part of the surface which is towards the skin, you commonly find a minute opening, a sort of prick or point, which when you come to examine it with a probe or pin, you find to be an aperture leading to the cavity of the cyst. If you insert the end of the probe or pin into the opening, you find that the contents of the cyst may be squeezed out. Hence, he concludes, that these *steatomatous* encysted tumors or wens are in fact sebaceous follicles enlarged. Now you commonly find a great number of sebaceous follicles about the nose and other parts of the face, and in particular individuals it will happen that the excretory ducts of these follicles become obstructed by the substance they contain, and at the surface you see generally a black colour exhibited. You can by pressing the integument in which this takes place, squeeze out a white substance, which common people call a worm or grub. The idea of Sir Astley Cooper is, that the excretory duct becomes obliterated, and then that the secretion going on, and the follicle enlarging, constitutes these cysts.

Now the contents of most cysts correspond in appearance with the fatty substance I have described, and the cysts themselves with follicles, while there is the appearance of an internal cuticular lining, as I have already mentioned: there is, therefore, an

analogy between these bags and the follicles in the integuments with which they are connected. We not uncommonly find a mixture of hair with the fatty substance, a number of short hairs sometimes adhering to the side of the cyst, and sometimes loosely contained in the interior with the mass of the fatty substance. There is, however, this distinction between the hairs contained in these cysts and those that grow naturally on the integument,—the former do not possess bulbs. If you draw a hair out of the eye-brow or head, you find that at the root there is a minute bulb, which is the point from which it grows; but in the hair which is contained in these encysted tumors, the roots have no bulbs. The interior of these cysts is not only capable of producing hair, but also horn. Though it is not a very common occurrence, yet it happens sometimes that one of these encysted tumors ulcerates on the surface, so as to expose the interior cavity; the cuticular lining thus exposed, becomes dry, and assumes nearly the nature and appearance of horn. Under the part that has thus become dry, a new cuticle is formed, which also becomes dry. Thus there is a succession of cuticular formations, each succeeding one projecting its predecessor forward, and in this way they gradually grow and rise above the level of the skin, and if they go on, a horny production of some inches in length ultimately takes place, not having the exact figure of a horn, but analogous in the nature of its composition, and much like it in hardness and semitransparency. There are instances in which this growth has attained more than the length of the finger.

We cannot say respecting encysted tumors in general that they are always enlarged sebaceous follicles, because in many instances they form a considerable depth under the skin, in situations where naturally there are no such follicles at all. It is not uncommon to have these encysted tumors occurring as congenital productions. I have seen many instances where it was said they were such, especially about the eye-brow. Now it is remarkable, that when they occur there they are usually found adhering firmly to the bone, and are covered by the muscles. Then, again, you may have encysted tumors distinctly formed deeper than the subcutaneous adipose tissue; and I have already intimated that you may have these encysted tumors in the interior of the body, and in these parts they cannot be accounted for on the supposition of being enlarged sebaceous follicles.

Ordinary encysted tumors generally assume a globular shape, as in this instance, [shewing a specimen,] not completely spherical, because they usually have a compressed appearance on one part.

As I have already intimated to you, they

occasionally appear to be congenital productions; they are found in certain situations, and persons who have not noticed their origin at all, have supposed that they have existed from birth. I remember an instance of a small tumor of this kind situated on the root of the nose of a boy; it had an external opening, and had given a great deal of trouble. The parents did not like the appearance of the tumor; for there was a strong smelling secretion produced by it, which continued notwithstanding the use of various means. When I examined it closely, I perceived a hair growing from the aperture. Upon inspecting it more minutely, I found it to be one of those cysts from which hair is produced. It was seated behind the ala of the nose, and I found it necessary to divide the integuments freely, and cut to the bone, as a part of the membrane from which the hair was produced, adhered to it. It was similar to one of these [pointing to a specimen] cuticular encysted tumors.

Not uncommonly you meet with a multiplicity of these tumors on the body; they are apt to form on the head and the scalp. Under such circumstances very frequently a great number is found in the same individual, from half a dozen to a dozen. These in the bottle [shewing them] were all taken from the head of one person, and one of them, you observe, has got hair growing from the cuticular lining.

These encysted tumors are not in general attended with pain or inconvenience; they increase in size very slowly, and sometimes they remain stationary. I may observe to you in speaking of congenital tumors, that they take place about the eye-brow, and that I know persons who have had them all their lives, in whom the tumors never got beyond a certain size: they remained stationary. Occasionally, however, they increase and become troublesome, in consequence of their bulk, and as they are situated immediately under the skin, they produce an elevation of this, which is irritated and fretted, perhaps, by the dress or movements of the body, and thus they become a source of uneasiness. Sometimes they increase to a considerable magnitude, though they by no means arrive at the large size which I have had occasion to describe in some of the other tumors that I have already mentioned. The tumor that I stated I had removed from the neck of a lady, was about the size of a large orange: that was one of the largest I ever met with; you will seldom see one that has proceeded to that magnitude.

If an encysted tumor is stationary in point of size, and if it produce no particular inconvenience to the individual, you had better leave it alone; there is no necessity for doing any thing to it. If, however, it is increasing, if it is troublesome, or if it produce conspicuous deformity, particularly in a fe-



male, then you must get rid of it, and the only effectual and safe way of doing this is by the use of the knife: you must extirpate the tumor. A palliative mode of treating these tumors is by opening the central aperture which I have already spoken of, and enlarging it by introducing a probe, and squeezing the contents out, after which they will again slowly accumulate. If, however, you want to get rid of it, the only really safe and effectual proceeding, as I have already mentioned, is excision.

Then, as to the mode of accomplishing this, one method consists of making an incision over the projecting part of the tumor, and dissecting off the integuments on each side, and removing the tumor without opening the cyst. This requires a pretty large opening of the skin, and the dissection is often rather a slow and tedious one. Sir Astley Cooper proposes a mode of proceeding in which the object may be accomplished more quickly, and with a smaller external division of the integument. He divides the tumor and the integument which covers it perpendicularly, so as to split it into two halves; then the contents of the tumor can be removed, and the cyst collapses. You take up one half of the cyst and drag it outwards with a forceps, and remove it by a few strokes of the knife, and then do the same with the other. In many instances the cellular connexion of the cyst with the surrounding parts is so loose, that when you lift it with the forceps, it will come away of itself, and you remove it without dissection. But in other instances it adheres closely both to the skin and the parts on which it is situated, and as it is more troublesome to dissect it away under such circumstances, I would advise you not to tare out the cyst with the forceps, but first make the necessary division with the knife;—if you lacerate the parts, more particularly if they are seated about the head, you run the risk of producing inflammation, that would be unpleasant subsequently. You may adopt either of these modes, but I think you will find that Sir Astley Cooper's is the shortest, and that you will get rid of the tumor with a smaller external incision in that way than in the other. I must observe it is necessary to pay attention to remove the *whole* of the cyst. If you leave a part of it behind, future inconvenience is produced, and sometimes it is necessary for the patient to submit to another operation. I had under my care lately a lady from the country, who had a small encysted tumor of this kind, which appeared to be congenital, removed from the middle and lower part of the frontal bone, just above the nose. Being in town, she consulted me on the subject; she said, that the removal of the tumor had been a painful operation, and that subsequently to this, the part had continued red and sore;

that it sometimes healed up, but that it again became painful and troublesome; that it swelled, and a thin matter escaped, from it for some time. This was at the space of about a year from the performance of the operation for the removal of the encysted tumor, and in fact when I saw her, I found it was open. There was an aperture in the scar, and there was an oozing of thin matter from it. I introduced a probe, perhaps half an inch. She was convinced in her own mind that some part of the "bag," as she called it, had been left behind, and I could only ascribe its present state to that circumstance. I told her it was necessary to make another cut, and see if that were the case. This was accordingly done, and I found a small portion of the bag, not more than half the size of the finger nail, had been left adhering to the frontal bone. It was one of those cysts that are connected with the bone, and where we must go close to the bone to remove it. When I got it out, I found it was one of those cysts which have hair growing from them; she said, she had looked at the bag which was taken out before, and she saw that it had several hairs in it. When this portion of the cyst was removed, the part healed speedily, and it remained perfectly well. It is an unfortunate thing to leave any portion of the cyst when an operation is performed, for, under such circumstances, the tumor will not subside. The lady merely submitted to the operation for the purpose of having a deformity removed, but thus her condition was rendered worse than before; in fact, the tumor in the first instance only presented that sort of appearance which, I suppose, a phrenologist would consider merely as a considerable development of the organ of individuality.

I have several times had occasion to remove some of these congenital encysted tumors above the eye-brow, and at the angle of the eye; and I wish to impress upon your minds, that you usually find them adhering to the bone, so that it is necessary to make a free incision through the skin and to dissect carefully down; and pray be sure that you actually remove the whole, to avoid unpleasant occurrences of the sort that I have mentioned.

Other modes of dealing with encysted tumors have been proposed, in order to avoid the pain of dissecting out a bag of this sort. Some have proposed to make an opening into the cyst, to squeeze out the contents, and then inject an irritating fluid, so as to excite inflammation in the cyst, with the idea of obliterating it in the same way as with regard to the tunica vaginalis in hydrocele. It has been proposed to open the cyst, to get rid of the contents, and then to rub the interior with caustic; or to pass a seton through the cyst, to produce inflammation of the sides,

and to cause a deposition of adhesive matter, by which the cavity might be consolidated. Now the truth is, these proposals proceed on a false analogy. The cysts of these tumors are not like the serous membrane of the testicle; you therefore cannot expect to accomplish the same process by injecting irritating fluids into them. But farther, these cysts do not bear irritation well. You excite inflammation, the inflammation extends to the cellular and adipose membranes that surround them, and is speedily extended to the neighbouring parts of the limb; and thus you get diffused inflammation of the cellular membrane—a very formidable occurrence. Sometimes the irritation of the cyst causes a fungoid growth to be produced in it, of a malignant kind; so that you run the risk of bringing the patient, by your operation, into a worse condition than he was before, and that, in many instances, merely to get rid of a deformity. I deem all these proposals objectionable—either the puncturing or injecting the cyst, or the irritation of the seton, or any thing of the kind. All these are calculated to produce inflammation in the cyst, and thus lead to serious consequences; and in my opinion they are radically and entirely objectionable. You have the choice of two things in encysted tumors—either to leave them alone and let them remain quiet, or to cut them out; you must do either the one or the other—you must not take a middle course.

The tumors which are called *ganglions* are a kind of encysted tumor. They consist of a fibrous cyst, lined by a smooth membrane, and contain a fluid nearly approaching to the synovia of the joints. They are found in the neighbourhood of the fibrous sheaths which surround the tendons of the extremities. They are most common about the wrist and the back of the hand. They are generally smooth tumors, on which the skin moves easily;—usually they have an elastic feel; they sometimes are partly moveable, but in general they are fixed at the base. They are indolent, they arise insensibly, give no pain, and usually are only of a small size. They are commonly found about as large as a pea; it is seldom that any go beyond the size of a nut, or at all events of a walnut. When you puncture these tumors, you find them generally distended with a clear viscid fluid, very much like the white of egg;—sometimes it is rather thicker, and more like jelly; sometimes it is thinner, with a number of white granular bodies, like boiled rice, or sage, swimming in it. Some of these tumors are rather larger than I have mentioned. You are aware that there is a kind of large, loose, synovial membrane surrounding the flexor tendons of the fingers, where they pass under the annular ligament of the wrist; now that may be the seat of a swelling of this kind. You then find the

swelling is sufficiently considerable to be apparent towards the wrist and the fore-arm, on the one side, and towards the palm of the hand on the other. The contents fluctuate on pressure; if you press on the palm of the hand, the contents pass towards the fore-arm, or *vice versa*, the middle of the tumor being situated under the annular ligament. Sometimes the sheaths of the tendons become the seat of ganglion; and, in fact, there is an enlargement of the theca, containing fluid, and occasioning a general swelling of the whole limb.

These ganglions often, like the encysted tumors, acquire a certain size, and do not increase farther nor give any trouble; occasionally, however, they are troublesome—they produce inconvenience in the moving of the tendons with which they are connected, so that if you move the fingers it excites pain. Persons sometimes become anxious to find out some mode of getting rid of them: now one mode is to burst them. You apply pressure, strike a blow, or squeeze them, so as to crack the cyst and disperse the fluid in the cellular membrane. When a ganglion is seated on a bone, you can generally break the membrane with the finger and thumb, and thus disperse the swelling, and often it will not occur again; or if the swelling is reproduced, you can repeat the same process. This is a safe, and where you can accomplish it, generally an effectual proceeding. Sometimes this fibrous cyst is so dense, so hard, that with all the force you can exert in that way you cannot break it. Pressure has been recommended, but in general it is not very effectual. The method of using it is to apply a piece of sheet-lead, and bind it over the tumor. When that is not sufficient, persons have been directed to use irritating fluids—such as oil of thyme (*oleum origani*)—but we cannot place much confidence in them. If you cannot break them in the way I have described, perhaps the next best course is to puncture them, and then apply pressure. Evacuate the contents, let the parts be kept quiet, and then apply pressure. When there is a large swelling of this kind, occupying the whole finger, you may do good by subjecting the whole part to pressure. You can there apply pressure more effectually than in a similar ganglion about the wrist. If there be a large ganglion of this kind, or when it is seated on the flexor tendons under the annular ligament, and if the motion of the flexor tendons be interrupted, you have merely to puncture the cyst, and then close the wound again, so as to exclude the air, and then apply pressure.

In the treatment of large ganglia, some of those means have been recommended which I have had occasion to mention to you in speaking of encysted tumors—that is, the passing of a seton through the swelling, or

the injection of irritating fluids after evacuating their contents. But I consider all these proceedings decidedly objectionable, for the same reason that I objected to their employment in encysted tumors; and perhaps the grounds of objection here are even stronger—that is, the chance of exciting inflammation is more considerable. I have seen, in some French works, accounts of cases of large ganglia, affecting the tendons of the hand, treated both by injection and by the employment of setons; and M. Cloquet, the author of a work on Anatomy, which is now being published, relates his having seen two cases where setons were used in ganglia of this kind, where the inflammation that arose from them was so considerable as to prove fatal. I have seen a reference to other instances of the same kind, where fatal effects have been produced in this way; so that it is necessary for you to proceed cautiously in dealing with swellings of this kind.

#### DISEASES OF THE SKIN.

The next subject which I propose to speak of to you, is *Diseases of the Skin*.

The skin is very abundantly supplied with blood-vessels and nerves, and is exposed to all the varieties of external influence capable of producing disease. Hence you will not be surprised at finding that the diseases of the skin are very numerous, and that a great part of them exhibit a pretty active inflammatory character, in consequence of the facility with which disease, when it commences, spreads by continuity over a considerable part of the skin. The influence of those affections which in themselves would not be very important, thus becomes of consequence, from their spreading over a large part of the surface and affecting a large portion of the body. In this way, diseases of the skin are capable of very considerably disturbing the economy generally, because they interfere with important functions that are carried on by the affected parts. The skin is one of the great excretories of the body—it is one of the organs through which matters are got rid of that are to be separated from the body. You therefore see the necessity of this emunctory being in a healthy state, and that any disease that occupies a considerable portion of it cannot fail to produce a serious impression on the animal economy generally.

There is a great sympathy between the skin and the digestive organs. The condition of these produces a great effect on the state of the skin—so that a number of the affections of the skin are directly traceable sympathetically to disorders which originate in the alimentary canal. This influence is reciprocal; for, on the other hand, the state of the skin is capable of seriously disturbing the condition of the digestive organs.

The inflammatory affections of the skin differ very considerably in their character and degree, and in the effects which they produce. Some shew themselves merely in a state of vascular turgescence and fulness, others produce effusion on the surface of the skin, and various other effects. Now, as the diseased affections of the skin are very numerous, it becomes of consequence that they should be distinguished by appropriate names, so that we may know the particular affections of which we speak and read. When we hear merely that a person has an eruption, it gives us very little idea as to what the nature of the affection is, and the remark is equally applicable to certain terms which designate, in a general way, the diseased appearances of the skin—such as blotch, pustule, scale, and scab;—these, when used without discrimination, convey very little definite or clear information respecting the disease. There is a term of this kind constantly employed by the French writers—*dartre*; equivalent to the English word *tetter*. The term has been employed so generally, that we are at a loss to know to what affections of the skin it is applied. We had no very clear idea of the nature or distinctions of cutaneous affections until the late Dr. Willan undertook the investigation of the subject. He paid a great deal of attention to the various affections of the skin, and introduced something like a regular order and plan of arranging and distributing them in particular classes and species. Dr. Willan died before he had completed his investigation of this important subject; which, however, was afterwards taken up by an intimate friend of his (Dr. Bateman);—and to these authors we are indebted for a rational description of the diseases of the skin, in which terms are employed in a definite sense; so that when we speak of scab, or pustule, or vesicle, we mean a something which is perfectly clear, defined, and ascertained; and thus the various species of disease are designated by appropriate terms. The understanding of this subject is more particularly facilitated by an illustrative set of plates, of a very useful kind, published by Dr. Bateman, in quarto, and well calculated to elucidate the subject. The arrangement proposed by Dr. Willan has been found so useful, that it has been adopted by the best French writers on the subject. There is in the French language a large work, published by a Frenchman (Alibert), who, I believe, is physician to the king of France, in which there is a great number of plates of an expensive kind, but in which the old names and old arrangement, or rather want of arrangement, are still observed. But there is a late writer (M. Rayer) who has written a Treatise on Diseases of the Skin, and who acknowledges that the arrangement of Dr. Willan is decidedly the best, and, in fact,



adopts it. The work of Rayer is entitled *Traité Théorique et Pratique des Maladies de la Peau*, and is, in my opinion, a very good one; the descriptions are very clear, and the causes and all parts of the subject are treated very well.

Those affections of the skin in which there is merely a vascular turgescence, a distention of the vessels, and consequently increased redness, are classed by Dr. Willan under the head of *Exanthemata*, or *Efflorescence*. In common language, the term *rash* would be applied to these diseases.

When the inflammation of the skin is attended with vesication, so that the cuticle is raised into large bladders, these are called *Bullæ*, and they constitute an entire order of cutaneous affections.

When the cuticle is raised into small vesicles, as in the itch, or herpes, it belongs to the order of *Vesiculæ*. In cases where the inflammation of the skin is attended with the formation of pustules, as in small-pox, cow-pox, impetigo, and some others, it forms the order *Pustulæ*.

The inflammation of the skin is sometimes of a less violent kind; and without producing either serous effusion, or vesicles, or pustules, it produces a peculiar state of cuticle, covering the part, which constitutes a scaly condition. Hence the order *Squamæ*, scales, or scaly diseases of the skin. Sometimes the inflammation is limited to a small point, and produces a great number of minute inflamed pimples, or *Papulæ*. These are the effects of a pretty active inflammation affecting the skin; and you observe that the names of the orders are derived from the degree to which the inflammation is carried, and the effect that is produced. *Exanthemata*, *bullæ*, *vesiculæ*, *pustulæ*, *squamæ*, *papulæ*—these are the names.

There are changes of structure which are of a more chronic character, either arising from chronic inflammation, or sometimes from those organic changes which are of a more serious kind,—they constitute the order of *Tuberculæ*: elephantiasis, for instance, lupus, cancer, and so forth. Then there are a number of states of the skin which cannot be referred to any of these causes. We have congenital affections, *nevi materni*, discolourations of the skin, things that can hardly be called diseases; and numerous other affections of the cuticular covering of the skin, such as warts, corns, and various affections of the nails.

This is the foundation of the arrangement which has been adopted by recent writers on the subject of diseases of the skin. You will find that while a certain number of heads, such as I have now mentioned, are laid down as constituting so many orders or classes of diseases, if you enumerate under these all the various species which can be distinguished from each other, a very considerable number

of diseases of the skin will be set before you, and the catalogue will appear a long one. Now you are not to believe that all the various forms of disease to which names can be given, are essentially different diseases. They are, in fact, merely forms of the same affection, *inflammation of the skin*. The essence of the disease is the same throughout, though there is a difference in the form. The cause that produces it, the circumstances that attend it, the state of the individual in whom it occurs, produce modifications in form, but there is no difference in the essential nature of the complaint. You are not to suppose that each of these names renders the disease in its nature distinct from all others. In truth, you find occasionally that one and the same disease will exhibit those different appearances that would seem to entitle it to be arranged under different orders. Erysipelas is sometimes a mere efflorescence or redness; in other instances it is attended with large vesicles or bullæ; or it may be attended with smaller vesicles, such as constitute vesiculæ. Small-pox and cow-pox consist in their first stage of elevations of the cuticle from lymph effused under it. But in the course of the affection these vesicles are converted into pustules. Sometimes two or more of these forms are assumed at the same time. Thus, in a venereal affection of the skin, you have a scaly and a tubercular eruption co-existing in the same individual.

You are to understand that the diseases of the skin, like others, do not conform to the distinctions of nosology. You do not find those lines of difference that you see in the writings of medical men; on the contrary, the various supposed affections are gradually shaded off and blended with each other; but at the same time this regular arrangement and nomenclature is of advantage, because it supplies us with a language that we can use, so that when we hear of particular forms of disease we know what is meant by the terms employed. Before this arrangement was adopted in cutaneous diseases, we could understand very little of what was meant by a number of statements in reference to diseases of the skin.

#### LECTURE XXXIV.

*Recapitulation.—Diseases of the Skin—Roseolæ—Erythema—Erysipelas.*

IN the last lecture, gentlemen, I spoke to you of encysted tumors; and in mentioning the opinion entertained by Sir Astley Cooper, that they consist of enlarged sebaceous follicles, I stated some circumstances which tend to shew the analogy in point of structure between these productions and the integuments. I observed to you, that the fatty substance which fills these bags is similar to that of

the adipose membrane in which they are imbedded; I mentioned to you the cuticular lining which we find on their internal surface; and I observed to you farther, that they frequently contained, intermixed with the fat, growths of hair. Mr. Langstaff has been kind enough to favour me with a few specimens from his valuable collection, illustrating this subject.

I now shew you two specimens from animals. This is from a bullock; and Mr. Langstaff informs me, that where the colour of the hair of the animal is dark, the cuticular lining of the cyst is also dark: in this case both are dark. This is a similar tumor from a sheep, where the cyst contains a quantity of wool. This is a very capital specimen from the human subject, of a cyst turned inside out, shewing a large quantity of hair in it. You observe that the cyst is thickly covered by a hairy growth; and Mr. Langstaff confirms the fact which I mentioned to you, of these hairs being without bulbs.

I should have stated to you in my last lecture, but I omitted to do so, that the cysts sometimes contain hydatids; but those that do so are seated more deeply under the surface than those which are immediately cuticular, which lie in the adipose stratum immediately under the skin, and which contain the various materials that I described to you in my last lecture, more particularly substances of a more or less fatty nature. But sometimes we find that these encysted tumors are placed more deeply—perhaps under the superficial muscles, and these occasionally contain a large quantity of hydatids—that is, of globular cysts filled with animalcula, and adherent to the bag in which they are contained. Now I remember seeing an operation performed on a young woman who had a tumor on the neck, and we supposed that it might be a solid tumor; but when the integument was divided, and the part cut down upon, it turned out to be a large hydatid. There was a smooth cyst, and a large hydatid in it, which was taken out. I remember an instance of an operation in this hospital, where a tumor was removed from the fleshy part of the thigh of a female. It was rather deeply seated, so that no very clear opinion could be formed as to the composition of the tumor before the operation; but when it was exposed, it turned out to be a bag, containing a collection of hydatids. I met with an instance of a large cyst of hydatids contained in the orbit of the eye; and I may mention to you generally, that the loose cellular and adipose tissues in the intervals between the globe and the orbit, and the various muscles of those parts, are the seat of numerous growths, both of the sarcomatous and encysted kinds. The patient to whom I allude had a painful affection of the eye, or rather in the parts situ-

ated behind the eye. Gradually the eye began to protrude from the socket. The patient had very great pain deep seated in the orbit, and pain in the brow and neighbouring bones. The protrusion of the eye increased, vision became disturbed, and, in fact, at length was entirely lost. The pain in the eye and neighbouring parts increased, and became so considerable as to deprive the patient of rest, and render him very ill; he lost flesh, and seemed to be in a very bad way. These changes went on slowly; and on examining the case carefully, I found a prominence between the upper eyelid and the globe of the eye, and something that I could recognize as a distinct tumor. The extent of the tumor was uncertain, its boundaries by no means well defined, and it was altogether doubtful what to do in such a case; but after repeated examinations, it appeared that there was an obscure fluctuation in the tumor. From this circumstance I was led to puncture it, to see if it contained a fluid, and to get some kind of insight into its composition. When I punctured it a small quantity of perfectly transparent fluid escaped, and I did not know much more about the case than before. However, on seeing the patient a few days after, a sort of white membranous substance protruded at the opening, and I took hold of it with the forceps and drew out an hydatid. In the course of a few days, seeing the patient again, I drew out another hydatid, and some others followed. I was led to conceive from this circumstance that there might be a large quantity of these hydatids within the orbit, which had produced the swelling, and caused the protrusion of the eye from the socket; I therefore injected water into the opening I had made, and dislodged nearly half a tea-cupful of hydatids of various sizes, from that of the head of a pin to that of a large horse-bean, or larger. When the cyst was thus cleared of its contents, the eye passed back to its situation in the orbit. I did not know exactly what might happen with regard to the part in which this production of hydatids had occurred; however, inflammation took place in the cyst—purulent discharge followed—it then gradually diminished—the aperture closed, and the patient was completely relieved, so far as the existence of the tumor and the protrusion of the eye were concerned; but the protrusion of the eye had been too considerable, and the loss of sight had existed too long, to allow of the return of vision. I may mention to you generally, that tumors are frequently seen in the orbit; I have sometimes seen them containing watery fluid, and sometimes a fatty substance. With respect to these I may repeat what I said to you respecting encysted tumors occurring in other parts of the body: when by their bulk, or from any other circumstance, they interfere with the

functions of important parts in which they are seated, it becomes necessary to remove them. Now the necessity of removing them from these causes occurs more commonly when they are developed in the orbit of the eye than when they happen in other parts, because here there is but a limited space for them to grow in; and a small tumor soon interferes with the vision, and by pressing on the optic nerve and protruding the eye, produces an effect of such a kind, that you are compelled to take some measures for its removal at an early period.

I mentioned to you generally, in my last lecture, the divisions which had been adopted by more recent writers on the diseases of the skin; and I now proceed to offer such observations as I have to make on this subject.

In the first division of cutaneous diseases—that is, *exanthemata*, we observe simply vascular excitement, and distention of the blood vessels, and increased redness of the skin, in consequence of that distention; and in other instances these affections terminate either in the sudden disappearance of the symptoms—that kind of termination which I mentioned to you under the French name, *delitescence*—or in a little effusion or resolution, or very commonly by the separation of the cuticle from the inflamed skin—*desquamation*. In the case of measles and scarlet fever, this vascular excitement is general; it extends over the whole of the body, and it is preceded in these cases by a general febrile disturbance of the system, more or less severe, of which the cutaneous disease seems to be a sympathetic effect or symptom. The most important part of the affection in these cases is the febrile disturbance of the animal economy. People do not suffer in such instances from the derangement, so far as it affects the skin merely. These, however, are affections the management of which belong to the physician, and I have therefore nothing more to say of them at present.

#### *Roseola and Erythema.*

Under the head of roseola and erythema, pathologists speak of superficial inflammation of the skin, generally affecting a part only—that is, usually occurring in patches, in portions of greater or less extent, not accompanied with swelling, vesication, or any other change of that kind;—occurring either as the immediate effect of some external irritation, or more indirectly as the consequence of some internal affection.

In the work of Dr. Bateman, which I mentioned in my last lecture, there are some representations of these affections. These are two views [exhibiting them] of such efflorescence or redness of the skin, in patches of different forms or appearances, occurring in children, under the name *Roseola*; several species are given. There also are repre-

sentations of two other varieties of this kind of affection, *roseola variolosa* and *vaccina*—that is, superficial redness of the skin, occurring in conjunction with small-pox and cow-pox.

The name *Erythema* means simply redness, and the affection to which the term is given consists simply of increased vascular excitement in certain parts of the skin: there is no other change. When any external irritation is applied to the skin, such redness may be produced. The friction of the dress when it is too tight, will produce redness; the friction of folds of the skin in fat individuals, what is commonly called chafing, produces superficial redness and inflammation of the skin; and the application of heat, or any acrimonious substance, to the skin, will produce the same effect. Acrimonious discharges, as in the cases of gonorrhœa, diarrhœa, and dysentery, produce redness and various effects on the skin, in such parts as they come in contact with. In females affected with gonorrhœa, we see severe symptoms produced simply from the irritating nature of the discharge from the vagina upon the sound surface of the contiguous parts. We sometimes find the integuments of the parts over which the discharge flows, of a very bright red colour. If this continue we find the cuticle separate, and the parts become what we technically term *excoriated*—that is, deprived of the cuticle covering them. The inflammation which is excited in the skin loosens the attachment of the cuticle, which separates; and when this takes place there is generally a thin kind of discharge, usually of an unpleasant odour, taking place. While the cause continues, we find the inflamed surface will go into a state of superficial ulceration; and we find that warty excrescences will arise from them, and occasionally *condylomata*, which are flattened productions. All excrescences like these are simply the effects of some irritation of the skin.

Under the head *erythema nodosum*, Drs. Willan and Bateman have mentioned affections which consist of small patches of redness of the skin, particularly on the extremities, more especially the lower ones, in which there is not merely redness of skin, but a degree of inflammation and swelling of the subjacent cellular membrane. There is a figure of this affection in the work of Dr. Bateman, which is really very much like what we see in *erythema nodosum* [exhibiting it.] The patches are generally of an oval form, of a red colour, and more or less swelled; and when it becomes inflamed, it involves not merely the skin, but the subcutaneous cellular membrane.

Now the truth is, with respect to these superficial inflammations, whether they come under the heads of roseola or erythema, so far as the local effect is concerned they are



of very little consequence. The internal affections which give rise to them may be of more or less importance—that is, the disturbed state of the alimentary canal, which produces erythema nodosum, or perhaps any other of these, may be of some consequence; but the cutaneous affection itself is unimportant, for often the erythema nodosum, which is perhaps the worst of them, terminates in resolution. The skin and the subjacent cellular membrane are swelled, red, and inflamed; but in a little time the swelling subsides, the redness goes off, and the affection disappears; so far, therefore, as the local symptoms go, they merely require means of a simple character. A mild saturnine or spirituous lotion, to allay the heat and irritation, will probably be sufficient for this purpose; but you must adopt at the same time such internal treatment as is calculated to remove the disorder from the alimentary canal, which may appear to have produced the affection.

### *Erysipelas.*

We come in the next place to speak of *Erysipelas*, and the affection which we denominate by that term is called popularly *St. Anthony's Fire*. By erysipelas I understand simply inflammation of the skin. I don't regard that term as denoting any particular kind of inflammation capable of affecting other parts, though the term has sometimes been used in that sense. This erysipelatous inflammation has been spoken of in contradistinction to phlegmonous or common inflammation; but when we come to observe the phenomena that are described as characterizing erysipelas, we find that the description applies only to inflammation seated in the skin; and any person would be quite at a loss, I think, to describe erysipelatous inflammation affecting the brain or its membranes, or any other internal organ. I consider, therefore, that erysipelas denotes merely the particular seat of inflammation, and not the kind or nature of the inflammation; and, in fact, erysipelas is merely another name for cutaneous inflammation, or inflammation of the skin.

Now, it is true that the mucous membranes of the body bear a considerable analogy in structure to the integuments. The two are connected together at the outlets of the various mucous canals. Thus it happens that there is a good deal of conformity in their morbid affections between these two structures; thus the mucous membrane may possibly be the seat of inflammation which approximates to erysipelas of the skin; thus we hear people speak of *erysipelatous* sore throat; but I believe we use the term without being able to point out any character by which the affection may be distinguished from ordinary sore throat; indeed, there is no clearly marked sign by which what is

called erysipelatous sore throat may be distinguished from sore throat of any other kind.

In erysipelas we find swelling, heat, increased redness, and pain, affecting a considerable extent of the surface of the body. These effects are produced by simple vascular excitement in the part—sudden distention of its blood vessels, without any effusion of lymph into the texture of the inflamed skin—without any of the deposition which produces the hard and firm swelling of phlegmonous inflammation. Thus we find that erysipelatous inflammation of a part comes on very suddenly, is capable of going off equally suddenly, and leaves behind no trace that is capable of being recognized by examination after death.

The redness in cases of erysipelatous inflammation arises from a state of distention of the most superficial vessels of the body. Hence the colour is usually of a very bright red scarlet. Frequently it is observed that the redness in erysipelas has something of a yellowish cast in it, so that it has been compared to the colour of the rose; and hence erysipelas, in many languages, has received the appellation of *Rose*. Sometimes it is called so in English, and bears the same name in France and in Germany. Under certain states—that is, when the inflammation is not very active, or when the part is in a depending situation, so that the return of the blood takes place under disadvantageous circumstances, the redness may assume a livid coat. The tumefaction in erysipelas is soft and diffused—that is, it extends over a considerable surface. The swelling in these cases arises from a serous effusion into the subcutaneous cellular tissue;—it does not arise from a deposition into the texture of the inflamed skin, but from the effusion of serum into the cellular tissue that lies beneath it. Sometimes the inflammation is not sufficiently active to produce swelling. You may have erysipelas consisting simply of increased redness, without tumefaction of the affected part. The pain that attends erysipelatous inflammation is of a smarting and burning kind, attended with a peculiar sense of heat, and when it is violent, with a very sharp sense of heat; the part is sensibly hotter; you perceive that it is so when you put your hand to it. When the inflammation has arisen to a certain height, you find that effusion takes place from the inflamed vessels on the surface of the skin—that a serous fluid is poured out from them, which elevates the cuticle into vesicles of larger or smaller size. Occasionally the vesicles thus formed are of considerable magnitude, and pretty much resemble those produced by the application of a blister to the skin, which are called in technical language of nosologists, *bullæ*. More commonly the inflamed skin in erysipelas becomes covered with an

infinite number of very small vesicles, varying in size from the head of a pin to that of a horse bean, and being so thickly set as to cover the whole surface of the skin. The contents of these vesicles are in the first instance clear, colourless, and transparent; or perhaps have a slight yellow or brownish tint. In a little time they become turbid and yellow. The vesicles then break, their contents escape, and these encrust on the surface of the skin into thin scabs. After continuing adherent for a certain time, these scabs separate, and the skin will be found under them to have recovered its healthy state. When this process is going on in one part of the skin, the inflammation extends in circumference to fresh parts, and the same course takes place in these. There is first redness, heat, and swelling, then vesicles, bursting of these, encrustation, and scabbing; and as this process affects successive parts of the skin, we find that the part that has been first inflamed will have recovered and become completely sound, while the inflammation is going on actively in those parts that have been subsequently attacked in this way. Erysipelatous inflammation not uncommonly extends over a large part, or over the whole surface of the body; and this disposition to extension is a circumstance which particularly characterizes erysipelas, and distinguishes it from phlegmonous inflammation.

We can hardly wonder, when we see how contrasted the phenomena in the two affections are, that some persons have supposed that there is something essentially different in the nature of the two diseases. In phlegmon you have inflammation occurring in, and limited to, a certain spot, going through a certain series of change in that part, and not affecting any other; while in erysipelas the inflammation spreads from its original seat indefinitely, and there is no limit to its extension, in many instances, till it has affected the whole of the body. The seat of the inflammation is different in the two cases. In phlegmon the cellular membrane is the seat of the disease, while in erysipelas it is the skin; and in reference to the spreading, you observe that the skin over the whole body constitutes but one organ; it is one continuous part, homogeneous in structure; and we cannot wonder that when inflammation has once attacked the capillaries of the skin, it should extend by continuity over the whole body. In erysipelas we see none of the tendency to limitation observable in phlegmon, from the circumstance that there is no coagulable lymph effused. In phlegmonous inflammation there is a deposition of lymph into the inflamed textures, which resists its progress; it forms a wall or barricado, which confines the inflammation to a certain part, and prevents it from extending beyond it. Now this effusion of coagulable lymph never

takes place in erysipelas; on the contrary, the disposition to spread seems to be the particular and distinguishing feature of erysipelas. When the inflammation, then, has gone over the whole, or a particular part of the body, and when it has taken the course that I have described, of vesication, and scabbing, and separation of the cuticle, the complaint comes to its natural end.

Sometimes, from the encrustations that are formed by the escape of the contents of these vesicles, superficial ulcerations may occur, though generally when the scab falls off the surface of the skin beneath is sound. There is not much tendency in erysipelas to the production of two circumstances which very commonly take place in phlegmonous inflammation—I mean *suppuration* and *mortification*; we may say, in fact, that suppuration is a very rare occurrence in simple erysipelas. Towards the end or decline of the inflammation, we sometimes find a small formation of matter in the cellular membrane under the skin. Mortification is an uncommon occurrence in simple erysipelas; it may occasionally take place, but we seldom see it. On the other hand simple erysipelas often terminates by the sudden disappearance of the symptoms altogether, or by resolution; but whether vesication takes place or not—whether the complaint ends in this manner, which is the more natural termination, or whether the symptoms disappear suddenly, almost invariably desquamation occurs—the cuticle becomes separated from the skin in consequence of the inflammation, and is detached, constituting the operation which is technically called *desquamation*.

You will naturally suppose that a violent disorder like this cannot affect a large extent of the surface of the skin without being accompanied by symptoms of general disturbance. In many cases of erysipelas considerable fever precedes the development of the inflammation of the skin, so that the inflammation is rather sympathetic of the general disturbance than an original affection. When the inflammation of the skin takes place, it acts sympathetically on the digestive organs and other parts of the economy, and increases the disturbance which has originally produced it. In many cases the inflammation is produced immediately, by direct exciting causes acting on the skin—causes of an irritating kind, injuries, wounds, surgical operations, heating and irritating dressings applied to wounds after the performance of operations—all these, by their directly irritating effects, are capable of producing erysipelatous inflammation—that is, of producing inflammation of the skin which will extend from the original part more or less over the rest of the body.

Now, in estimating the effect of these directly irritating causes, we must consider the state of the constitution of the individual to

whom these causes are applied. A wound or a surgical operation taking place in a person in a very healthy state of body, would not be attended with erysipelas; but if you performed an operation on a person not in very robust health—if you perform an operation on a person who has been in the habit of free living, who has continued his ordinary habits of eating and drinking up to the time of the operation—if you pay no attention to the state of the individual before performing it, you would be very likely to have erysipelas follow. If you perform an operation under any circumstances, and should dress the wound afterwards in an injudicious way, by applying very tight bandages, covering the part with a large quantity of dressing, keeping it excessively hot, leaving the patient to follow an injudicious diet, allowing him to have animal food and other improper things after an operation, it is very probable that erysipelas may take place. In fact, whenever erysipelas takes place after an operation, I believe I may say you will invariably be able to trace it to some neglect, either in the previous preparation, the performance of the operation, the injudicious mode of dressing the wound, or in allowing improper diet after the operation. If you attend carefully to all these, you will not be troubled with erysipelas as a consequence of surgical operations.

Now you will find that an affection which goes under the name of erysipelas, occurs under a variety of circumstances, more or less differing from each other. There is a form of erysipelas affecting the head, which approximates very considerably, in its origin and in the circumstances that accompany it, to those diseases which nosologists have called *exanthemata*—that is, eruptions preceded and accompanied with fever. In erysipelas affecting the head, you have a febrile disturbance of the system for some days before the affection of the skin appears. The patient feels hot, feverish, and thirsty, has a white tongue, his pulse is accelerated, and perhaps strong; he loses his appetite, feels something of nausea and sickness, and then an erysipelatous swelling of some part of the face comes on. The skin becomes red and soft, diffused swelling occurs, and a portion of the skin vesicates; and then the inflammation extends to a fresh part, which goes through the same course. Thus the inflammation creeps over the whole head; the affection occupies perhaps, in its progress, ten days, a fortnight, or three weeks. When it has gone over the whole of the head, it probably declines, and comes to an end without affecting any other part. This has been called *erysipelas exanthematicum*—exanthematous erysipelas; and it must be allowed to be a different inflammation from that which is seen in the skin, and which occurs in consequence of a wound or surgical operation.

Then you have that kind of erysipelas which results from direct irritating causes, where the local inflammation is the first circumstance, and where the constitutional disturbance, when it takes place, is the consequence of the local irritation. The inflammation of the skin which arises in this way, shews itself under different characters, in different instances. In some cases it is confined to the part in which it originally shews itself, and does not extend beyond it. In other instances, it gradually creeps over the whole of the limb in which it is first developed, or it may extend to the trunk and the whole of the body. Thus nosologists have called erysipelas *fixum*—that is, fixed to the part where it first takes place; or *erraticum*—that is, wandering or spreading erysipelas.

Sometimes the effusion of serum into the cellular tissue is a marked feature in the complaint, producing considerable swelling of the limb in which it takes place;—this is called erysipelas *adematodes*.

I should have observed, with respect to the general disturbance that attends these cases of inflammation, that, in some instances, it exhibits the character of what has been called *inflammatory fever*—that is, there is an excited state of the pulse; which is accelerated, full, and strong, with pain of the head, and the other circumstances generally which attend an inflammatory disturbance of the system. In some instances the general disturbance is more particularly marked by the symptoms which denote disturbance of the digestive organs; so that it would constitute what has been called *gastric* or *bilious fever*, where there is a foul and coated state of the tongue, loss of appetite, nausea or sickness, and an irregularity in the performance of the functions of the digestive organs generally. But whether the symptoms should be of one or the other kind that I have now mentioned, in the first instance, they often exhibit an altered character as the complaint proceeds. The general disturbance, which in the first instance may have been active, assumes a different character after the complaint has lasted some time. The pulse, which was strong, may become feeble; the tongue brown and dry, and the general character of the symptoms assume a typhoid appearance. In some instances the head is very considerably affected; and in the latter stages of such affections delirium comes on, and the patient often goes into a state of *coma*, or unconsciousness; a low muttering delirium comes on, and he at last becomes stupid and insensible.

As erysipelas is essentially an inflammatory affection, the treatment of it must be of an antiphlogistic nature. In young and robust persons, where the local and general symptoms are urgent, you will find it necessary to employ pretty active depletion—to



take blood from the arm, to exhibit active aperient medicines, and to follow up these by the use of saline and antimonial medicines; and to employ at the same time a low diet. After bleeding and giving active aperients of calomel and jalap, or calomel and extract of colocynth, you may give the patient a solution of Epsom salts with tartrate of antimony, or you may exhibit calomel and James's powder, with saline draughts in the intervals. In fact, under such circumstances you employ an active antiphlogistic treatment.

I had occasion to mention to you, in speaking of the effect of diet, the case of a gentleman who had a local complaint in the arm, in whom an imprudent indulgence brought on a severe attack of erysipelas. I saw this gentleman about thirty-six hours after the attack came on. The affection was seated in the axilla; and at that time the shoulder, the upper extremity down to the elbow, as well as the anterior part of the chest, were all of the brightest scarlet colour, and as thickly set with minute vesicles as possible. You could hardly put the head of a pin between the vesicles on the surface of the skin. Now the general state of that gentleman was such as might have been expected if any important internal organ had been the seat of active disease. His pulse was accelerated, full, and strong; he was excessively hot and restless; he had a white tongue, and he had lost his appetite;—and this was a state that could not be remedied by simple purging. Being a very free liver, and having had some experience in medicine, he had taken active purgatives, which had operated before I saw him, and yet the symptoms were no better. He was 31 years of age. I deemed it expedient to bleed him, and I removed from his arm thirty ounces of blood, which was very strongly buffed and cupped, and exhibited as good a specimen of inflammatory blood as you would wish to see. I then gave him two grains of calomel and two grains of James's powder every six hours, and in the intermediate times he took doses of saline medicines, and kept constantly applying warm fomentations. By these means, in a few days the inflammation was at an end, and he was convalescent.

You cannot, however, regulate the proceeding in this case simply by a reference to the age of the patient. This occurred in a young man, thirty or thirty-one years of age. I had occasion to remove a tumor from the side of the face of a gentleman rather above sixty. I had performed an operation of a similar kind on him once before, and found on that occasion that there was a considerable inflammatory disposition in his system. I took great pains, by proper diet and giving him purgative medicines, to bring him into a safe state for the operation, before I per-

formed it. I happened to be obliged to leave town for two days, about three or four days after the operation, and I left full instructions as to what was to be done. But when I came back I found that his bowels had not been moved for two days, and that he had got an attack of erysipelatous inflammation over the whole head; the eye-lids were swelled so that the eyes were closed; there was violent vascular disturbance, excessive heat, a frequent, but not a full or strong pulse; a foul white tongue, with a very hot and offensive breath, and the functions of the sensorium, which had been failing for the last twenty-four hours, were now very much oppressed; indeed, at the time I saw him, he was lying in a comatose state. He did not answer questions that were put to him, and, in fact, for the last twelve hours, he had not been able to articulate. His condition was a very precarious one. I immediately thought it necessary to take a large quantity of blood, and I accordingly took from his arm two pints by measure. By the time the evacuation had been accomplished, the sensorium was so much relieved that he perfectly recovered his consciousness; he was able to understand what I said to him, and answered me clearly and rationally. I then administered active aperient medicines, and continued the use of them; and in the course of five or six days that gentleman was quite convalescent. This, then, is the course of proceeding you are to adopt in cases of erysipelas, where the disease is acute, and where the individual is strong and of full habit.

There are other instances, where the inflammation is not so strongly marked—not so active in the symptoms; where the individual is not so robust, and where, of course, you do not resort to means of so active a character. It may be sufficient to take blood locally—perhaps by cupping, perhaps by the application of leeches to the inflamed part, or perhaps by the performance of numerous punctures with the lancet upon the inflamed skin. With respect to the application of leeches to the inflamed skin in erysipelas, I may observe that the ordinary notion of danger, from the bites being likely to add to the inflammation, is totally incorrect. It is true, in particular individuals, leech bites will cause an affection of the skin that is commonly called erysipelas—that is, they will produce swelling, redness, and a state somewhat approaching to that of erysipelas; but when the leeches are applied to an erysipelatous skin, they do not produce any effect of this kind. The abstraction of blood from the vessels of the skin which are in a turgid state, is a direct and very advantageous mode of relieving the affection; and having seen leeches applied in great numbers, over and over again, to an erysipelatous skin, I can assure you there is no

ground for apprehending ill consequences from them. I have not myself seen the practice of puncturing the erysipelatous skin employed, but that course has been recommended by Dr. Dobson, physician to Greenwich Hospital, who alleges that he has employed it frequently, in all cases of erysipelas, with great advantage. The mode he has used, is that of making numerous slight punctures, with the lancet, over the inflamed skin. He says that a large discharge of blood is the consequence of this practice, which produces effectual relief; and, in fact, if the abstraction of blood by leeches is advantageous, we cannot have a doubt that the removal of blood by such punctures is likely to produce much relief. Then, in conjunction with this system of taking blood from the inflamed part, we should of course exhibit aperient and saline medicines, and regulate the diet of the patient. In instances where the tongue is foul and loaded, and where the patient experiences sickness or nausea, we may occasionally derive advantage from the exhibition of an emetic previous to the employment of purgatives.

After the antiphlogistic treatment has been actively used, and in cases where we see the patient at a protracted period of the complaint, when the active inflammatory symptoms have been put a stop to, we often find him in such a state that antiphlogistic means would be totally out of the question. We find him with a small feeble pulse, a great sensation of weakness, and in a state that we should describe as one of obvious debility: of course you would not think of taking blood, or employing lowering means, under such circumstances. In this state, you will find it advantageous to employ tonics, or stimulating remedies, and a diet of a corresponding kind.

Now, in cases where we are in doubt whether we should employ either mild antiphlogistic measures or those of a different kind, I think we may safely exhibit the subcarbonate of ammonia, which is a remedy that some persons rely exclusively upon, in the treatment of erysipelas, and even employ it throughout the whole of the affection. It may be administered in doses of from five to ten grains, in any liquid vehicle, once in three, four, five, or six hours; and you will find it a remedy that may be safely employed in these doubtful cases.

Where the indication is very obvious for the employment of tonic medicines, we should exhibit bark, either in substance or decoction; or, what is still more eligible, the modern form of sulphate of quina, in which the bulk is less and the tonic powers seem equally efficacious. In conjunction with these means we of course allow a better diet. Under such circumstances, we frequently find it advantageous to combine the

employment of direct stimuli, such as wine or porter, with the medicines that I have mentioned. But I should say, that wine must be cautiously used in cases of erysipelas. We are only to administer it in instances where the circulation is very feeble, and where the symptoms of debility are very strongly marked; and even then you should only give it just at the time that those symptoms exist, and not continue its use after they disappear. Because you find it necessary to administer wine, we are not to go on giving it day after day; but when the purpose is answered of producing temporary stimuli to arouse the system, and when the end is answered, then we must leave it off. I think it necessary to be exceedingly cautious in the use of wine in the cases of young persons who are affected with erysipelas. I have hardly seen any instance where persons under the age of puberty would bear the employment of wine under such circumstances.

With respect to the local treatment, it has been generally acknowledged that this has less power in erysipelas than the general measures that I have had occasion to advert to. In the early period of the affection, before vesication shall have taken place—that is, before the complaint has been fully developed—I think you will find that cold applications (as saturnine or spirituous lotions) are the best. But when the inflammation is fully formed, particularly when vesication has taken place, you will, I think, usually find that warm applications, in the shape of fomentations, are more advantageous. But in order to derive the full benefit these are capable of affording, the fomentation must be employed more constantly than is generally done: it is not sufficient for the parts to be fomented for ten or fifteen minutes, three or four times a-day, but the fomentations should be kept constantly applied. You should have a person to attend the patient, and continue a regular succession of warm cloths or flannels to the part; and in this way very great comfort is produced. When vesication has occurred, and encrustation has taken place, it will be necessary to employ some kind of unctuous application to the part; or it may be necessary to apply a simple poultice of bread and water. In the treatment of erysipelas, especially when it occurs in the face, some have recommended the application of flour to the surface, which, I suppose, is tantamount to the confession that local applications are of no use at all; for I cannot suppose that sprinkling a little flour on an inflamed skin can have any virtue or influence in removing the disturbance of the part.

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## LECTURE XXXV.

*Phlegmonous Erysipelas—Treatment by Incision—Urticaria—Herpes.*

GENTLEMEN,—The expression *phlegmonous erysipelas* is employed in two senses: it is used to denote either the more acute cases of common erysipelas, that is, those in which the general and local symptoms are highly inflammatory, and in this way the term is used by Cullen; or to denote those cases in which the skin and the cellular membrane are both inflamed together. These latter cases are sometimes described under the denomination of *diffused inflammation of the cellular texture*. It is in this sense that I employ the term, considering it to denote the inflammation at one and the same time of the skin and of the cellular membrane. Now the skin and the cellular membrane are so intimately connected with each other, that we are not at any loss to account for their being inflamed together; in fact, we might rather expect, from observing their close connexion, that they would always suffer together. We find, however, that the skin may be inflamed separately, and that is the case that I have already described to you under the name of *simple erysipelas*. In this case, however, when the inflammation is active, the cellular membrane participates in some degree with the tumefaction that belongs to the skin;—the erysipelas gives rise to a serous effusion into the cellular texture under the skin, and we find that this tumefaction is more considerable in those situations where the cellular texture is more abundant, being particularly marked about the eye-lids. The cellular texture may be the seat of inflammation alone, more especially the deeper seated cellular structure of the limb; but when this becomes actively inflamed, the skin sooner or later participates in the affection.

The affection is termed *phlegmonous* when it is limited to a small part of the cellular membrane, and it is called *diffused* when it occupies a considerable part of the same membrane. Now, in many instances, we find inflammation affecting at one and the same time both the skin and the cellular structure; or we find that the inflammation beginning in the skin, soon extends to the cellular membrane also; or that the inflammation beginning in the cellular membrane, soon spreads to the skin; and whether the inflammation arise in both parts at the same time, or whether it arise in one, and spread to the other, in either case the term *phlegmonous erysipelas* is applied to it; that compound epithet denoting, that the skin and the cellular membrane are both of them in a state of inflammation. Erysipelas being the appropriate term for inflammation of the skin, and phlegmon being the old term applied to inflammation of the cellular mem-

brane, the name is, therefore, very proper, and denotes a case in which the skin and the cellular membrane are both involved.

In its general character, phlegmonous erysipelas resembles simple erysipelas, that is, the inflammation occupies a considerable surface; it spreads with great facility; there is no disposition to limitation; on the contrary, it extends to the neighbouring parts, and soon occupies a considerable extent of the surface, or the entire limb in which it has been developed.

The swelling in the case of phlegmonous erysipelas is firm and resisting, instead of being soft and pitting, as it is in common erysipelas. The skin which is the seat of the affection, is of a bright red colour, tense, and shining; sometimes it is of a bright scarlet tint, sometimes it is of a deeper colour, or even of a somewhat livid hue. But it is the firmness of the swelling—it is the resistance which it affords when you examine it—it is the want of the pitting or softness which belongs to common erysipelas, that particularly distinguishes this form of the disease. There is severe pain, of a burning kind, attending the affection. This is experienced in the early stage of the disease, and it soon becomes very considerable. We shall find, perhaps, in the first instance, when we see a case of this kind, that the redness and swelling may occupy a space as large as the hand; in twenty-four hours there may be double that extent inflamed, and within a short time the whole of the limb may be occupied by these appearances. The cellular membrane, however, very speedily passes into a state of suppuration and sloughing, and in proportion as the inflammation is extending in circumference, the changes that I have just mentioned are proceeding in the situation in which the disease has been first developed. Suppuration, when it occurs in the cellular membrane, like the inflammation itself, is of a different character from what it was in phlegmon. You have not here the deposition of matter in one collection forming an abscess; on the contrary, it is disseminated throughout the cells of the affected structure. You find, in the first place, that there is a serous effusion into the cellular texture, but when the affection proceeds further, the fluid assumes an opaque and purulent character; that it is a thin yellow purulent fluid, which is disseminated through the cellular texture, and which, when you make an incision, you can squeeze out of it. Generally, you do not find it deposited in a particular chamber, like abscess, but disseminated in the cells of the inflamed membrane.

In conjunction with this disseminated or diffused suppuration, you sometimes find a deposition of thick and well-formed matter in particular spots of the adipose membrane,



so that when the part is divided, portions having this character come out at certain points. You find sometimes that such formations of matter take place in small sinuses or tracts, burrowing to a considerable extent in the adipose membrane. In conjunction with this, you will generally find that portions of the cellular membrane turn of a yellow colour,—which portions have lost their vitality; in fact, they have sloughed, and will subsequently be separated. Now these changes you will find particularly to have taken place in that part of the cellular membrane which connects the adipose substance to the fascia, or to the muscles of the limb. The alterations that I now speak of, are not so frequently observed in the stratum of adipose membrane that lies immediately under the skin; but it is the affection which more particularly attacks the *cellular* membrane—that part of this texture which does not contain the fat—the part which lies under the adipose stratum.

In proportion as the affection advances, you find that the external feeling of the part becomes considerably altered. There is no longer the tense and firm swelling which distinguished the affection in its inflammatory stage; but although the part has now a soft feel, yet you cannot say that you can distinguish actual fluctuation, for there is no matter collected into a particular spot, but there is a softness, shewing very clearly that the part is unsound; and this peculiar sensation, or rather the alteration which produces the sensation, occupies a considerable portion of the surface. After a time, the skin becomes a little prominent at some point; the projection ulcerates, and gives way, and thus the matter that is formed in the cellular membrane, is partially discharged. But the opening which is thus made, affords an insufficient exit for the suppuration. A part only of the matter that is formed in the cellular membrane exudes through an aperture of this kind, and the sloughs of the cellular membrane are only partially evacuated by such openings. As the affection advances, however, these openings become more considerable; the collections of matter get rather a freer issue, and the sloughs which have been formed, become loose and detached, and may be drawn out. These sloughs are often considerable in size and number; indeed, when inflammation has been active, and has occupied the whole of the limb, you will find that nearly the entire membrane connecting the adipose tissue to the fascia or muscle, perishes. Thus you may draw out through the opening that has taken place in the way I have described, loose detached shreds of cellular membrane, like pieces of wetted tow, several inches in length, and soaked in pus.

When this process of sloughing has extended considerably under the skin, the vessels which pass from the deeper-seated parts

to the surface become separated; and thus the vascular supply of the skin becomes interrupted. Thus it will happen that portions of skin being undermined and detached in this way, lose their vitality, and a sloughing of the skin will take place, not as the immediate consequence of a violent inflammation, but by a secondary kind of mortification—perishing from the interruption of the vascular supply which they should derive from the parts underneath. In cases of extensive phlegmonous erysipelas, the integuments of an entire portion of the limb, as the leg or thigh, may be completely detached and separated from the subjacent fascia and muscles. Thus there may be an extensive kind of abscess, if we may use the term, between the skin and the subjacent parts.

You will naturally expect that a serious local affection of this kind should be accompanied with corresponding general symptoms. In the first place, you usually find that there are symptoms of active disturbance of the vascular system;—an accelerated and full pulse, heat of skin, a white tongue, thirst, loss of appetite, and so forth. In some instances, the disorder of the digestive organs is more marked;—you do not find so much disturbance of the circulating system, but the functions of the digestive organs suffer more particularly. In proportion as the inflammation with the consequent suppuration and sloughing become more considerable, so does the sympathetic influence of these local disturbances on the circulating and other systems also become augmented, while at the same time the general powers of the patient decline. Thus you have the pulse very rapid and very frequent, but feeble. You find the functions of the sensorium disturbed; the tongue becomes brown and dry; the stomach and digestive organs very much disordered; and, in fact, the patient goes into a state of typhus, and it is in that way he perishes when he dies in the active stage of the inflammation. If, however, the patient has strength enough to struggle through this period of the affection, the extensive local suppuration brings on a state of hectic and diarrhoea, which generally concludes the scene.

The causes of this affection are generally, if not universally, severe local irritation. In many instances, you find phlegmonous erysipelas immediately produced by injuries; especially by such wounds as penetrate into the cellular membrane. It is a very common consequence of compound fractures. It occurs not unfrequently after wounds or injuries of the synovial membranes or bursæ musosæ, such as those seated about the hand or about the patella. It sometimes occurs as a consequence of wounds from venesection; and sometimes in consequence of injuries that are received in dissection.

Phlegmonous erysipelas not unfrequently supervenes in cases of ulcers of the leg, especially if these have been neglected, and where patients continue to exert themselves, and to use the limb imprudently.

You will naturally conclude, that the effects of these causes will be more considerable when they occur in individuals who are of plethoric habit—who are free livers, and who are addicted to habits of intemperance; those who imprudently exert themselves, and who neglect those attentions which their condition, when such phlegmonous erysipelas supervenes, would naturally demand.

In the treatment of these affections, when you consider the serious local inflammatory symptoms, and the general disturbance of the same character which belongs to them, you would suppose that active antiphlogistic treatment would be required. We find, however, that inflammation of the cellular membrane cannot be so immediately controlled by antiphlogistic treatment, as inflammation of various other textures of the body. In strong persons, in young and robust subjects, and in the very commencement of the affection, you may sometimes find it advisable to take blood generally, not so much with a view of arresting the affection in that very early stage, as in order to prevent its development more extensively. However, if the inflammation is already firmly established, we should endeavour to accomplish this object by the local loss of blood through the free application of leeches to the part, while we encourage the bleeding by warm fomentations. When, however, the disease is fully established, we shall find that we do not succeed in putting a stop to it, either by the general loss of blood, or by its free local abstraction by means of leeches. You may employ either of these treatments pretty actively, but you usually find that it does not prevent the progress of the complaint; it not only does not remove the inflammation from the parts in which it has already taken place, but even does not prevent its extending to fresh parts. Under such circumstances we shall find that the most effectual treatment consists in the practice of making an incision through the inflamed textures—a free division of the inflamed skin and cellular membrane; and we shall find that in instances where we have failed to arrest the affection, either by general bleeding or the application of leeches, the mode of treatment that I now allude to will at once and effectually stop it. The plan of making incisions in the inflamed parts has been pretty extensively employed in this country, on the recommendation of Mr. Copland Hutchison, who some years ago published a tract on the subject: he had practised it in the navy, and he had been in the habit of seeing the most severe cases of this kind

in sailors. Having found the inefficacy of the ordinary modes of treatment, he had recourse to the plan I am now alluding to. What he advised was, to make incisions through the inflamed skin and cellular membrane of about an inch and a half or two inches in length, and so numerous as to extend over the part that was the seat of inflammation. If, for instance, it was a case of inflammation affecting the lower extremities, he might make twelve or eighteen such incisions. I have adopted this practice freely; I have employed it in a great number of instances, and can speak strongly as to its beneficial effects. But I have not found it necessary to employ the multiplicity of incisions which has been recommended by Mr. Hutchison. You will commonly find it sufficient to make a single incision and carry it through the middle of the inflamed part, along the whole length of the inflammation, through the skin and integuments; and that one such cut will answer all the useful purposes which he has described as being produced by more numerous incisions. If the leg were the seat of this affection—the posterior and inner part of the leg, for example—you might commence the incision at the knee, and carry it through the middle of the inflamed part to the ankle, or as low as the inflammation extended, dividing the skin and the whole depth of the cellular membrane down to the fascia. It is not necessary to go deeper than that. This incision is to be accomplished by means of the ordinary sharp-pointed double-edged bistoury. You take it between the finger and thumb, allowing as much of the instrument to project as will make the necessary incision, and then just carry it gradually along. If you have not divided the whole depth of the inflamed cellular membrane, which is the seat of inflammation, you can, with the same instrument, easily cut through the remaining parts where any portion of your incision may be defective.

The immediate effect of this incision is a very copious discharge of blood from the vessels of the inflamed part; and the loss of blood in this way is the most effectual mode that can be employed, because it comes immediately from the vessels that are the seat of inflammation. You find the arteries and veins of the limb thus divided bleed very freely, so that 20, 30, or even sometimes 40 ounces of blood, will flow from an incision of this kind in as short a time as you could get it from a large opening in a vein of the arm; you will indeed be surprised at the short time in which a large quantity of blood actually flows from an incision of this kind. You find the blood running freely in a large stream out of the subcutaneous veins you have divided; and a great number of arteries pumping out the blood in jets by numerous orifices. By the mode in which

the blood is thus discharged, you can account for the manner in which such a large quantity of it is lost. The effect of this is not simply to lessen the degree of inflammation, but to take off the tension of the part also; so that you find, by the time the flow of blood has ceased, that the part which before was of a bright shining red, becomes of the natural paleness of the skin; and the part that before was tense and shining, becomes wrinkled, giving the most satisfactory proof that the tension is at an end; and the patient obtains the most decided relief—a fact that I have verified by repeated observation.

Now this free loss of blood is a circumstance calculated to put you on your guard in adopting this treatment. You may find that the patient loses rather more than you may like—he might lose more than he could bear, and it might consequently cost him his life. You must, therefore, watch the patient—you must not quit him; or, at all events, you must leave him with some one to take care that the loss of blood does not go beyond a safe point. If the blood is running out freely, and the pulse is sinking, you must adopt means to stop the hæmorrhage forthwith. You can do this sometimes by elevating the limb, and retaining it in that position; or by pressure on the part out of which the blood flows; or sometimes you find it necessary to take up one or two of the bleeding vessels, and in that way you generally arrest the hæmorrhage, if it be troublesome.

The plan of incision in phlegmonous erysipelas may be adopted at all periods of the complaint. If you employ it before suppuration and sloughing have taken place, you will prevent the occurrence of those changes; if you employ it after they have commenced, you will prevent the extension of the inflammation, and thus will limit the extent of the suppuration and sloughing. I have always seen, where this plan has been put in practice effectually, that the inflammation has been decidedly stopped; and I have not found any fresh parts affected after the incision has been made. At the same time the incision which you thus make affords the freest discharge for the matter that is formed in the cellular membrane, and for the sloughs when they have become detached. The small opening which takes place in the skin by the natural process of the disease, as I have already intimated, forms a very insufficient outlet; but the free aperture you make by an incision of this kind, permits a much more effectual discharge. Even in the advanced period of the affection, when considerable sloughs have been formed and detached, when extensive suppurations have taken place, and when the integuments are all detached extensively from the subjacent parts, you will find that a free opening prevents the burrowing and lodgment of the matter, and

by giving ready issue to the suppuration and the sloughs, greatly promotes the healing process.

When a case of this kind has been allowed to follow its natural progress—when very considerable portions of the cellular membrane of the limb have been lost by sloughing and suppuration, you will not wonder that after healing has occurred the parts become preternaturally connected together—that considerable rigidity occurs, so that the motions of the joints in that part of the limb which is the seat of the inflammation, become considerably impaired. These are common consequences, which take place even if the patient recover, and afford a powerful reason for adopting any means which are calculated to limit the progress and check the advance of this serious affection, independently of the danger to the life of the patient, which belongs to the disease when it is allowed to go on unchecked. After the incision has been made in the way that I have mentioned, you will in general find it sufficient to employ simple dressings. A common poultice applied to the part, and a simple dressing afterwards, will be sufficient for the purpose in most cases. If the process of granulation does not seem to go on actively enough, you may dress the wound with yellow basilicon ointment, applying it under the poultice. You will find that the incisions which are made in this way heal very rapidly and very regularly, when the inflammation has been relieved, which it usually is by this treatment. Some persons have conceived that in the state of inflammation which occurs in phlegmonous erysipelas, the infliction of such an incision would of itself materially aggravate the local mischief—it has been considered that this irritation might occasion ulceration of an intractable kind; but, on the contrary, we find the processes of granulation and restoration generally go on with great activity and with great rapidity in these cases.

With respect to the general treatment of this disease, I need not add any thing to what I have had occasion to point out to you in speaking of simple erysipelas. In the active stage you must, of course, use means calculated to lessen the inflammation. If the patient become weakened and exhausted in the subsequent stages of the affection, you must employ measures of a different kind.

I remember an instance of a poor woman being brought to this hospital with a very serious affection of the lower extremities of the nature that I have above alluded to, in which the treatment that I have mentioned was attended with the most marked and beneficial results. This was a woman who had been previously in the hospital with a sore leg—an ulcer situated near the ankle: she had gone out with the sore nearly healed, but was obliged to exert herself considerably



in order to gain her livelihood ; thus a state of inflammation had arisen in the ulceration, and this had in a short time produced phlegmonous erysipelas, affecting the whole of the leg and thigh, and she was brought to the hospital in that state, being then in the seventh month of pregnancy. When I saw her in the evening (for she was brought in late) the condition of the leg and thigh was really quite frightful ; the limb was enormously swollen—the swelling extending over both the leg and thigh ; the leg from the lower part near the ankle up to the knee was of a bright red colour, with a firm swelling and vesications—the whole of the skin was in a state of vesication ; the foot and ankle enlarged by œdematous tumefaction ; the thigh at least twice the size of the limb, and of a bright red, extending along the inner side towards the groin. The rest of the limb was œdematous, and I do not know that I ever saw a case where the appearances were more unfavourable—the inflammation seemed so violent and extensive. She was so reduced when she was brought to the hospital, it being the winter time, that it was found necessary, from the low state of her pulse, to give her a little wine and water. She had taken a little of this, and had somewhat recovered when I saw her. Viewing the very serious nature of the local disease, and considering her state of pregnancy, I really thought it highly probable, that whatever treatment was adopted, the case would terminate unfavourably, and I mentioned my suspicions to the gentlemen present. However, I determined on giving her a chance, by adopting the plan that I have just recommended—that of incision. I accordingly made a cut, extending from the ham down to the inner ankle, through the skin and cellular membrane, carrying it along the middle of the inflamed part. The inflammation in this case also extended, though in a less degree, above the knee towards the groin ; but I did not like to cut exactly the whole length from the groin to the ankle, and I was therefore satisfied with making an incision along the whole of the lower part of the limb. She lost twenty ounces of blood from this incision, and she then took a large dose of Dover's powder. She was immediately relieved by the loss of blood, passed a very tranquil comfortable night, sleeping a good deal, and was greatly better next day. I need not repeat the history of the case minutely, for it is enough to say, that although she remained perhaps two, three, or four weeks in the hospital, she continued to go on favourably ; and from this time no bad symptom occurred—the pain never came on again. I believe some small formation of matter took place at the lower part of the thigh—that is, higher up than where the incision was commenced ; but with the exception of this the case went

on as favourably as it could do. Although the incision did not occupy the whole of the inflamed part, it seemed to put a stop to the inflammatory process, which never extended after the incision was made. It was attended with a diminution of the redness of the surrounding parts, and of the tension of the integuments, which clearly shewed that the inflammatory affection was arrested ; and, in fact, nothing could be more favourable than the progress of the case after the incision that I have mentioned to you had been made.

There was another instance in which the effect of this treatment was very remarkable, under circumstances perhaps yet more unpromising. It was that of a student at this hospital who received a wound on his finger in dissecting, which was followed by mortification of the last phalanx. The wound of the finger had been followed by violent inflammation of the hand, fore-arm, and arm, with most serious inflammatory symptoms generally ; and this went on in spite of very active means, including venesection, the local loss of blood, and other suitable measures, for about seven or eight days. This patient was under the care of Mr. Earle, who employed the most judicious means to remove the local inflammation. About the time that I have mentioned I saw this patient with Mr. Earle, and after considering the case, we determined to adopt the mode of treatment by incision. I should mention that this gentleman seemed almost in a desperate condition, with a very rapid feeble pulse, a countenance expressive of great anxiety, with a contraction of the features, a sharpness in the appearance of the face, and a general aspect that portended the greatest danger. He had not got any rest for several nights previously. The fore-arm and arm were swollen, and of a bright red colour up to the shoulder. This gentleman was in a state in which probably no one would have thought of proposing the abstraction of blood ; it would have been looked upon as the mode best calculated to hasten his decease. In this instance either two or three incisions were made, I hardly remember which. An incision was made along the arm, and I believe two in the fore-arm ; one over the radius, and one over the ulna, through the inflamed skin and cellular membrane. After the incisions were made the arm was enveloped in warm cloths, and the bed clothes were laid comfortably over him, for he was, of course, too ill to be up ; his extreme exhaustion would admit of no position but the recumbent one. No particular attention was paid to him for some little time, and when we had left the house an alarm was given that he was worse, and, in fact, he fainted. When his friends came to examine him, and to put aside the bed clothes, it was found that an immense quan-

tity of blood had flowed from the incision. The father told me that he considered that there was more than three pounds of blood lost; it was taken up by tea cupful and put into a washhand basin, cupful after cupful; and this produced, as you may well suppose, a state of syncope. But although it might have been inferred that such a loss of blood would have had a serious effect, it seemed to have acted quite differently from what it would otherwise have done, in consequence of being drawn from the vessels of the inflamed part; and, in fact, the gentleman derived the greatest relief from the depletion; he speedily recovered, and ultimately got quite well.

### *Urticaria.*

*Urticaria* is an exanthematous affection of the skin. The name by which it is well known in common language is that of *nettle rash*, and the corresponding names in other languages denote the circumstance of the affection resembling that inflammation of the skin which is produced by the contact of the ordinary stinging nettle. It consists of tubercular elevations, sometimes a little redder, but sometimes indeed paler than the skin itself, arising in the course of the night and declining again in the day, attended with a very severe sense of itching, pain, and burning heat.

These tubercular risings of the skin sometimes appear in the form of small circular elevations, perhaps not larger than half a pea; sometimes they assume the form of long elevations, constituting what are called *wheels*—appearances similar to the effects produced by the stroke of a stick, or whip, on the skin; sometimes they appear in pretty large raised patches; I have sometimes seen them as large as the palm of my hand, though it is not common to see them of that magnitude. These constitute what are called the *urticaria conferta*, or *tuberosa*, of the cutaneous nosologists. The skin of individuals in whom these appearances take place is particularly prone to inflammation; it is easily excited, for in such individuals very commonly mere pressure on the skin, or scratching it, will raise elevations of this kind. You can see them produced before your eyes. These elevations generally take place during the night; the patient is kept awake and prevented from resting by an intolerable sense of heat and itching. These lumps arise, they become troublesome for a certain length of time, then the itching goes off and the tubercles disappear; but a fresh set will come on the succeeding night.

There are more kinds of this affection than one; there is *urticaria perstans*—that is, a constant or continued state of nettle rash.

Generally speaking, these elevations take place on the skin in its natural state; but they are occasionally seen to occur on inflamed

patches of the skin, and this constitutes the *urticaria feb-ilis* of the cutaneous nosologists. I believe this affection of the skin is always dependent on the state of the digestive organs; very commonly it is preceded and accompanied by unequivocal symptoms of such disorder—that is, by loss of appetite, by nausea, and sickness. It is sometimes brought on by particular articles of food that disagree with the stomach—more especially by some kinds of shell fish. Now the muscle, which in some places is commonly taken as an article of food, not unfrequently produces this affection; and in some parts of the country, where the above is a frequent article of food, and where persons are consequently acquainted with this effect, it is known by the name of *muscle rash*. Not only other shell fish produce this effect, but also other articles of food. Again, it will be produced by gluttony or intemperance generally—by taking too much of those articles that stimulate and act unfavourably on the stomach.

Since this is the cause of the affection, of course the mode of remedying it is tolerably obvious. If the stomach be loaded, or in a foul oppressed state, from such practices as I have mentioned to you, the obvious remedy is to clear it by an emetic; and experience has so fully established the efficacy of this plan, that we may say in most cases this remedy will put a stop to the nettle rash. When you have administered the emetic, you may then purge the patient; and at the same time you should regulate his diet, of course prohibiting anything that seems obviously to have caused the attack.

Sometimes the complaint will last for a considerable time, and it will thus continue, in spite of such a mode of treatment as you might suppose calculated to put a stop to it. I remember being consulted in the case of an elderly person, who told me that he had not had a comfortable night's rest for a month. He had been troubled by nettle rash for that length of time, and had taken a great deal of medicine—a vast quantity of opening medicine—but it did him no good. Seeing he had taken opening medicine, and there was no good result from it, I doubted whether I should give him an emetic; but I thought I would try it, and accordingly I prescribed an emetic of the ordinary description—a scruple of ipecacuanha with a grain of tartrate of antimony. He took it, and he was effectually relieved; so that he did not want any other treatment.

### *Herpes.*

The name *herpes* is given to an eruption of minute transparent vesicles, taking place on inflamed patches of the skin. You have, in the first place, a sense of heat and tingling occurring in some part of the body. You see a portion, or some two or three portions of the skin become inflamed in small

patches, and very soon you find them rising up into a set or group of minute, transparent, watery vesicles. These enlarge, and in the course of two or three days they lose their transparent state, becoming brown, or yellow, and opaque. The contents of the vesicles escape, encrust upon the surface, form scabs, which fall off and leave the surface tolerably sound. You have a succession of these inflamed patches of the skin, going through the same process. Thus you find, in one and the same case, some portions of the skin in which the vesicles have just arisen, and where they are small and transparent; others in which the contents begin to change colour; others in which the encrustation is going on. The affection generally lasts ten days, a fortnight, or perhaps three weeks, and is attended with more or less of febrile disturbance; and then it goes off spontaneously, and leaves the patient well.

Now one of the most common of these affections is the formation of clusters of vesicles of this kind, which ultimately constitute a half girdle, or band, round the trunk of the body—this is called *shingles*; in technical language, *herpes zoster*, or *zona*. It is strange enough that this affection has been described by many, and those of pretty extensive practice, as a form of erysipelas, though there is no resemblance between the complaints. Cullen, in his *Nosology*, calls it erysipelas. Franck, Richter, and Boyer, state that herpes *zoster*—that is, the shingles—is a species of erysipelas, though the characters of the complaint are quite dissimilar. The shingles take place upon the trunk of the body; wherever it forms, it extends towards the median line, both anteriorly and posteriorly, and it limits itself to one half of the body. You have a succession of inflamed patches, and a succession of vesicles taking place in the patches. It approaches the linea alba in front, and the vertebral column behind; so that is not a zone, or girdle, but half a girdle. A strange notion has existed, which is as old as the time of Pliny, that if this affection extends completely round the body, it will terminate fatally; however there is no ground for it. It is said sometimes to pass the median line, but I never saw it do so. The expression of Pliny is, “*Ignis sacri plura sunt genera, inter quæ medium hominem ambiens, qui zoster appellatur et enecat, si cinxerit*”—it kills if it surround the body.

In shingles, or herpes *zoster*, the vesicles vary considerably in size—from that of a pin's head to the size of an almond. Now the latter comes under the technical denomination of what cutaneous nosologists have called *bullæ*. Herpes is placed among the vesiculæ by Drs. Willan and Bateman; but *zoster* by Boyer among the class *bulle*. I

believe it is mostly seen upon the abdomen and lower part of the chest. I have seen it occurring on the chest, spreading over the shoulder to the arm. I have also seen it extend longitudinally down to the hip. But in this situation, as well as where it is seated on the chest, it is confined to one half of the body, and does not go beyond that. This disease is generally attended by a febrile disturbance, and some derangement of the digestive organs.

So far as the cutaneous affection goes, it is unimportant; but the febrile symptoms, and the state of the digestive organs, require mild antiphlogistic treatment, the exhibition of aperient medicines, of saline and antimonial medicines, with reduced diet, and rest. There is often a great deal of local pain produced by the inflammation and vesication; and mild local applications are best suited to this state—simple saturnine or spirituous lotions;—common white ointment, or elder flower ointment, may be applied, or a soft poultice, if it proceed to encrustation.

The *herpes labialis* is that form of vesicular disease which occurs about the lips, in conjunction with some fevers, or towards their decline. Here you observe the progress of the complaint very distinctly—first the inflammation, next the formation of vesicles that become opaque and purulent, and then the bursting of the vesicles and the formation of crusts, or scabs.

*Herpes præputialis*.—Herpes occurring on the prepuce is a complaint that might be confounded with a venereal affection. Some inflamed patches occur on the prepuce—small groups of little vesicles take place upon it. Perhaps from six to twelve minute vesicles will occur on a patch of this kind, and there go through the process that I have mentioned. First they are small, transparent, watery vesicles; next they become opaque, and then they shrivel and dry up, while you have perhaps two or three patches forming in succession. The truth is, if you see them in a vesicular state, I do not know how it is possible to confound them with the venereal disease, they are so dissimilar; but it is well to be aware of the possible occurrence of such an affection, that when you meet with it you may know at once that it has nothing at all of a venereal character.

This affection, herpes, may occur on a limb, and extend the whole length of it. It is essentially the same as herpes *zoster*, differing only in situation. It has been described by Bateman as *herpes phlyctænodes*.



## LECTURE XXXVI.

*Scabies—Eczema—Variola—Vaccinia.*

Our next subject, gentlemen, is that vulgar disease called *itch*, to which we give the more polite appellation of *scabies*, or *psora*. There is some doubt respecting the situation which should be allotted to this complaint in the arrangement of cutaneous diseases; for we see it sometimes in the form of vesicles, sometimes in that of pustules, sometimes in the form of pimples—these forms appearing either separately or conjointly; so that it would seem to have nearly an equal claim to a place in three of the orders established by Dr. Willan. This circumstance will lead you to the conclusion that, although the arrangement proposed by Dr. Willan, and adopted by others, is convenient, as allowing of a distribution of the varied affections of the skin, yet we are not to conceive that these divisions indicate, in all instances, an essential difference in the nature of the affections they include; for here we see that one and the same affection may exhibit, at the same time, appearances which might lead to its arrangement under three different orders of cutaneous affection. The more common form of itch consists of an eruption of small, clear, transparent vesicles, on an uninfamed skin. These appear, in the first place, on the hands; they usually shew themselves about the intervals of the fingers, or about the wrist, and from that situation they spread over the upper extremities, and from thence over the body generally; excepting, however, the head and face. I do not say that the itch *never* appears on the face; but, at all events, it is an extremely rare occurrence to see it there.

As this complaint is contagious, it may be contracted by shaking hands; but as there is an exception of this affection from the face, you will understand that there is no fear of catching it by kissing. The vesicles that I have now mentioned extend over the body generally; they are pretty universally disseminated; they are not confined to one part, nor do they appear in distinct patches, or groups; and in this respect itch is distinguished from some affections of the skin which, in other points, bear a resemblance to it. The most troublesome circumstance belonging to it is that from which it derives its English name—the intolerable itching which accompanies it. It is an itching that people cannot bear, and, in spite of themselves, they seek relief in scratching. Thus it happens that the minute watery vesicles of which the disease consists become broken, and the character of the affection alters; for you have superficial encrustation, with an intermixture of slightly bloody discharge produced by the scratching. The vesicles, however, if left to themselves, supposing they were not at all broken by that

kind of external interference that I have alluded to, would give way; their contents would escape, superficial ulceration would follow from this natural process, and slight encrustation would occur in the parts which are affected by the pustules.

This affection is not preceded, nor is it accompanied by, any febrile or other derangement of the constitution. With the body covered all over with the eruption of itch, the patient, in other respects, may be in a condition of perfect health; and generally speaking, I may observe to you, that, however thickly these watery vesicles may appear in any part of the body, that portion of the skin which exhibits them is not inflamed, but usually retains its natural paleness. The eruption, therefore, of itch, in the form I am now alluding to, consists simply in the development of these small and perfectly clear watery vesicles.

Frequently we have the itch in the form of pustules, from the elevation of the cuticle by the secretion under it of a bright yellow purulent fluid. These occur about the fingers—more commonly in the intervals between them. Frequently you have them placed between the thumb and fore-finger, and about the wrist; they will extend to the palm of the hand, and from this situation they will proceed along the extremity, and affect the fore and upper arm. You have them in the same way upon the feet and legs, but you do not so commonly see these pustules on the trunk of the body.

The pustules of itch vary in their size, from a large pin's head to that of a sixpence; and sometimes you see them almost as large as a shilling, particularly where the cuticle is thick, as in the palm of the hand. Now as this form of the disease is attended with more of inflammatory affection of the skin, the basis of these large bright-yellow pustules is often inflamed; and when there are several of them seated near together, the part which they occupy is not only considerably inflamed, but it is generally swollen. There is a serous effusion into the cellular texture; and when there is a considerable number of these formed on the hand, the wrist, and the fore-arm (or in the same way in the lower extremities), you will find so serious a local irritation as to produce considerable fever—a degree of feverish disturbance of the constitution that may actually require the use of the lancet; a circumstance which you never observe in cases of the small watery vesicle. This is a form of the disease which is more particularly observed in rather young persons, and in those who are in a state of plethora, with fulness of habit; in those, in short, who are young and robust.

Now whether the disease shews itself in the form of vesicles or pustules, we do not find that it is equally disseminated over the whole body. Although it extends more or

less over the frame, we find the appearance most obvious in those situations where the skin is liable to friction, from the dress or from the natural motions of the part; we find, therefore, that there is the greatest quantity of itchy eruption about the wrist, the bend of the arm, and the arm-pits—about the waist, and about the knees and hams.

I should have observed to you also, about the itching, that it is not a symptom which is always equally troublesome. During the day-time, when the skin is cool, the patient does not feel a great deal of annoyance from it. But whenever the individual is heated (such as when he becomes warm in bed, or after eating and drinking heartily, so as to excite the circulation), then the itching sensation becomes troublesome, and almost intolerable.

Then there is a third form of the affection, in which it appears in the shape of *pimples* on the skin, seldom distinctly prominent, but you can feel them by passing the fingers over the surface. When you make the examination more narrowly, you will see minute elevations, which are called pimples, or *papula*. It is said that if you examine these very carefully you will find minute vesicles on their centre. You may have all these three forms mixed together, or see them in some measure separately. I may observe to you, however, that you will not see the pustular form of itch without an intermixture of vesicles. As to the pustules in the itch, if you saw one or two separately, they might exhibit an appearance that you would not immediately recognize; but you usually see a multiplicity of them; and not only so, but you see around them the small, clear, transparent vesicles which immediately point out to you the nature of the affection.

The itch is most prevalent among the lower orders of the people, and its origin and propagation are particularly favoured by the neglect of cleanliness, whether in respect to person or dress, which is so common amongst them. Now, as they have such frequent opportunities of observing it, it seems that they have distinguished very accurately the different forms of the affection. Dr. Willan states, that he found among the common people that there was a distinction of four forms of itch, which they call the *rank* itch, the *watery* itch, the *pocky* itch, and the *scorbutic* itch; and he has really paid a great compliment to the accuracy of popular discrimination, by adopting these distinctions and introducing them, under scientific names, into his cutaneous nosology. The *rank* itch he calls scabies, *papuliformis*—that in which the pimply elevations of the skin are more prominent. The watery itch he calls scabies *lymphatica*—consisting of the more ordinary form of the complaint,

with clear, transparent, watery vesicles. The pocky itch he calls scabies *purulenta*. I may observe, that it is not meant to indicate that there is any mixture of pox, or syphilis with the itch; it is only used to denote the form of pustule, or pox in common language. And lastly, scabies *cachectica*, or scorbutic itch, in which we are apt to find a combination of various forms, but principally an intermixture with large patches of lichen, psoriasis, or impetigo, in elderly persons, with some other modifications of cutaneous disease.

Now the itch originates and is propagated by contagion. We are not aware that it ever arises from any internal cause, or from the state of the constitution in any individual. So far as our knowledge goes, itch would not take place in any person except by the communication of some poisonous or contagious matter from an individual previously affected with the complaint. Then there seems to be no natural end of the affection: the particular appearances go through a certain stage, and come to an end—that is, the watery vesicles or pustules of itch break, encrust, form superficial ulcerations, and then come to a termination. But you have a succession of similar appearances taking place after those that first have shewn themselves; these also come to an end, and then the disease attacks fresh parts of the body. Thus there is no reason why the itch should not last the whole life of an individual; in fact, in many instances, it lasts a great number of years, among the lower orders, who are not attentive to cleanliness, who do not change their clothes nor their linen, nor wash their bodies sufficiently often. I may observe to you, however, that the disease is not by any means so contagious as is imagined. People have a great horror of the itch, and would almost rather hear of some more serious calamity than that an individual connected with the family had got this complaint. However, the danger of infection is exaggerated by the fear we feel on the subject;—there is no very great risk of our having the complaint propagated in a family. Among persons who are cleanly, if the itch is contracted, it will be confined, perhaps, to a small portion of the body. It will not extend from one individual to another, in decent families—that is, in those families where general habits of cleanliness exist among all the individuals. I have known several instances of one individual in a family having the itch, without other persons with whom he has been in the habit of free intercourse catching the complaint.

I remember a clergyman calling on me with two of his daughters, one of whom, he said, had got an obstinate affection of the skin. They were two nicely-dressed young ladies. I begged her to let me see it; and when she uncovered her arm it displayed a

specimen of the itch—as fine a specimen as I ever saw. I could not help believing that such was the complaint. The gentleman said that some persons had supposed it was the itch, and that means had been used accordingly, but that they were not effective. I told him that my opinion was decidedly that it was itch—that I could not view it in any other light, and that if the proper treatment were adopted the lady would get free from it. He said it could not be the itch; for she had been in the habit of sleeping with her sister all the time she had had it, which was nearly a year, and the sister had not contracted the complaint. I told him I could only recommend a certain treatment—one calculated to cure the itch. This was put into practice, and she was completely and speedily cured.

Now the appearances which attend itch may belong to some other affections of the skin; and thus it becomes important to distinguish this complaint from those which resemble it. I may state to you generally, that the particular circumstances from which the complaint derives its name—that of intense itching—the absence of febrile or any other disturbance of the system, and the uninfamed state of the skin on which these appearances take place, are the principal circumstances which characterize it. Also the great diffusion of the affection over the body, its dissemination without being confined to any part, or the appearances being collected in particular patches or parts of the body. These are the main circumstances that characterize the itch.

Now the great remedy for itch is brimstone; and if there be any kind of remedy which can be deemed a specific for any complaint, I think we must regard brimstone in that light—as a specific remedy for the itch. The external application of it, in the form of ointment, to the affected skin, is the most effective mode of employing it. The brimstone ointment consists, according to different prescriptions, of different proportions of brimstone. Thus, in the London pharmacopœia, the *unguentum sulphuris* is made by a combination of three ounces of sulphur with eight ounces of lard;—the sulphur ointment, which is recommended by M. Rayer, whose work on Cutaneous Diseases I have already had occasion to mention to you, consists of one part of sulphur and two of lard. He mentions another formula, which consists of two parts of sulphur, one part subcarb. of potash, and one part of lard, incorporated into an ointment. The unpleasant smell of sulphur, and the mode in which it contaminates all the dress of the individual, have made people anxious to mix it with something that should destroy the smell, or to find out some other mode of remedying the disease that is not exposed to this objection. Dr. Bateman, in his work on

Diseases of the Skin, gives a formula in which sulphur and lard are combined in equal proportions, but with which as much bergamot and cinnabar as will give it an agreeable smell and colour, and a little subcarbonate of potash and rose-water, are united. Perhaps it is a question of taste, but if I were so unfortunate as to have the complaint, I believe I should use sulphur ointment alone. I do not like using this mixture of sweets and stinks together; it is like administering food and physic, and you know that I have a great objection to that. The mode of using it consists first in cleansing the surface of the body, using the warm-bath, and having the body well washed with soap and warm water. Then the sulphur ointment is to be plentifully smeared over all the parts of the skin on which there is any appearance of the affection. The object is not to rub in the ointment as you rub in mercury ointment for the pox, but only to cover the affected parts plentifully with it. Then the patient should put on a suit of under garments—stockings, drawers, flannel shirt with sleeves, and gloves, so as to confine the ointment thus employed to the surface of the body; and these garments are to be worn till the treatment is at an end. The patient should repeat this sulphureous unction night and morning, and let him do the same for three or four successive days; then go into the warm-bath, and cleanse the surface well with warm water and soap, and you will be able to see whether there is any appearance of fresh eruption on any part; if so, you must repeat the process.

Now as to the time required for curing the disease, doctors seem to differ. I see that one practitioner of considerable authority, on diseases of the skin, says that itch may be cured in this way in twenty-four hours. I should not consider a person likely to get cured in that time; I cannot say that I ever saw it cured in so short a period. M. Rayer, in whose judgment I place great confidence, and who has had great practice in this affection—for the itch appears to be very common among his countrymen,—says that this mode of proceeding will cure the itch in fifteen days. I think him the nearer the mark of the two, according to my experience. However I believe that, in general, by using the ointment freely, it may be cured in less than that; but if it be inveterate (or rank, as the common people call it), I do not know that it can.

I may observe, that the application of the ointment is sometimes attended with a very copious appearance of the eruption. The common people say that the ointment brings the disease out; and I do not know whether the expression be not a correct one, for we see the eruption come out more abundantly 24 or 48 hours after using the ointment. I believe the various attempts to use sulphur



in other forms less objectionable than that of ointment, have not led to any useful results. Sulphurous baths have been used: four ounces of the sulphuret of potash may be mixed with as much water as is necessary for a warm bath; the surface may be washed over plentifully with a solution of sulphuret of potash, in the proportion of one or two drachms to a pint of water. Sulphur may be applied in the form of a fumigation or vapour—sulphur vapour baths. An ointment has been used composed of the strong sulphuric acid mixed with lard, in the proportion of half a drachm, or a drachm, to an ounce of lard. This ointment does not possess the disagreeable smell of common sulphur ointment, but it corrodes the linen of the patient, and is so far disagreeable. Then again, certain substances have been mixed with the sulphur. The white hellebore has been considered to have some efficacy as a remedy for itch. The unguentum sulphuris compositum of the London Pharmacopœia contains sulphur in conjunction with the root of white hellebore. There is an ointment which goes by the name of *Jasser* (so called after its inventor) much used in Hungary, that consists of the flowers of sulphur, sulphate of zinc, and laurel berries, in equal parts, mixed in the form of a liniment with olive or linseed oil; and this is to be rubbed on the surface of the body. Now I have sometimes seen persons employ all these various modes of proceeding, but I do not think that there is any thing so effectual, so beneficial, and so much to be relied on, as the simple application of common sulphur ointment. They may be capable of curing the complaint, but the time required is considerably longer, and the effect of the remedy much less certain.

A question will naturally occur, whether sulphur may be administered internally with any effect, or whether the cure can be promoted by it? I cannot distinctly say whether it can be cured by the internal use of sulphur or not, having been in the habit of seeing it employed in the way I have mentioned. I believe, though perhaps it may not cure the complaint, it may assist other means. You may therefore use sulphur mixed with treacle, in the form of an electuary, in aid of the external applications.

#### *Eczema.*

There is a genus of vesicular cutaneous diseases which has been called by Drs. Willan and Bateman *eczema*—a Greek term. I have already had occasion to mention the form of this affection produced by mercury—*eczema mercuriale*, or *rubrum*. Frequently you have an eruption of vesicles, preceded generally with a little inflammation of the skin, in consequence of some immediate external irritant. It is a form of cutaneous disease owing its origin to the direct application of some obvious cause. Thus you

have *eczema solare*—that is, the appearance of vesicles in consequence of exposure to strong heat during summer. Most individuals have it either on the face or on the hands, when these parts have been much exposed to the sun. Then it is seen in those individuals in whom any part of the body is habitually exposed to sources of irritation, such as grocers, bakers, bricklayers, and others, in whom certain parts are covered frequently with a minute powder or dust. These persons become the subjects of an affection of this kind; and in popular language these affections are known by the names of *grocers' itch*, *bakers' itch*, and *bricklayers' itch*. Sometimes it is in the form of watery vesicles, sometimes of small pustules, sometimes of an inflammatory state of the skin, or what is termed a *chapped* state of the cuticle, approaching to the condition called psoriasis.

In all these instances it is, of course, a matter of obvious necessity to remove the cause—to prevent the application of the external irritants which produce these effects; and, generally speaking, that is sufficient to cure this affection. Dr. Thompson, who has published a recent edition of Dr. Bateman's Synopsis of Cutaneous Affections, mentions that in certain of these affections, where there is a good deal of irritation and heat of the part, benefit has sometimes been derived from hydrocyanic acid locally applied. He gives one or two formulæ; for instance, a drachm of the hydrocyanic or prussic acid in eight ounces of emulsion of bitter almonds; half an ounce of prussic acid, with half a drachm of acetate of lead in sixteen ounces of distilled water, forming a lotion, with which the parts are to be bathed in the course of the day.

Now we occasionally see cases of this character, consisting in the appearance of watery vesicles, without our being able to trace the application of any external irritation, and without our being able to account for it by the existence of any internal disease. I remember an instance of a young woman who was under my care at St. Bartholomew's hospital, who had a large node on one ulna, and a considerable swelling both of the tibia and fibula. She was about 23 years of age. There was a considerable swelling, with ulceration, over the tibia. She was thin and pallid, and seemed in a bad state of health. By the means that were employed the ulceration on the legs became greatly diminished. She was then affected by a vesicular eruption, first in one hand and then in the other. There were a number of clear, transparent vesicles, varying in size from that of a pin's head to a large bean, formed on the palm of the hand and palmar surface of the fingers and thumbs, extending a little way along the corresponding aspect of the fore arm, with hardly any discolouration of the skin; some heat and tingling, but

not any violent itching. These vesicles began by exhibiting the appearance of transparent fluid, but some of them soon became a little turbid; they then gave way, and broke—a superficial encrustation formed, the cuticle peeled off from the hands, and in the space of five or six days the complaint had gone by, and, so far as the hands were concerned, they got quite well. The same appearance took place on the soles of the feet, and went through exactly the same course. The disease altogether, both in the hands and soles of the feet, did not occupy more than a fortnight, and then left the patient quite well.

I had another patient living in my own neighbourhood, who had a similar affection in the soles of the feet, which I could only call eczema, but which was of a more chronic kind; in fact, in this female the complaint lasted about four years. I first saw her about three quarters of a year ago; she then shewed me the soles of her feet, which exhibited a vesicular appearance; they were partly scabbed, from an encrusted state of the cuticle covering them. On the plantar aspect of the toes, along the borders, there were a number of vesicles, partly containing a watery and partly a somewhat yellow fluid. The soles of the feet and the toes were so tender, that she could not put her feet to the ground without pain. The complaint had then lasted about three years, and she had tried an immense number of applications; every thing of a strong kind, she said, disagreed with her, and did her harm. In the first place I directed the application of a poultice to the soles, that I might get the parts clean, and see something of their exact state. When the encrustations were removed by the poultice, the soles of the feet and the surface of the toes presented a curious appearance: the cuticle was perforated all over by a number of little openings, not unlike a number of shot holes. These were the openings of a number of vesicles, which had broken and discharged their contents. There was a great quantity of vesicles, containing a transparent or light yellow fluid, and the skin of the parts was of a bright red, highly inflamed. I directed her to apply a number of leeches and some soothing applications to the parts, adopting such internal remedies as this state of things seemed to require, and adhering to the rules of diet. When she put on the leeches the relief was so great that she thought she was cured. However, it soon turned out that she was not so; and, in fact, she is not well at this time, though it is about three quarters of a year since I first saw her. She has been in the habit, from time to time, of applying leeches and poultices to soften the cuticle; she has taken care of her diet, and paid attention to the state of her bowels; and, although she is not well, she suffers little compared with what she did before. She can move about the house, bearing the

weight of her body upon her feet, and is in a state of comparative ease and comfort.

#### *Small-Pox and Cow-Pox.*

I come next in order to *pustulae*, or pustular diseases of the skin; and here, in the first instance, we come to *small pox*, *cow pox*, *chicken pox*. Now vaccination and inoculation are certainly surgical operations; but I think, if we may borrow a phrase from the nursery, these are the “early lessons” of surgery, and as I have no doubt but you have been initiated into them, I do not mean to describe the mode of proceeding in either vaccination or inoculation. I dare say you are acquainted with the appearance of vaccine vesicles, so that I need not enlarge on that point.

Cow pox and chicken pox are considered as belonging to the physician, and are treated of in medical lectures, so that I need not speak of them. It is, however, perhaps necessary for me to refer to the opinions that have been entertained respecting vaccination and inoculation—to the advantages which belong to the former, and the grounds that would lead us to prefer it.

Heretofore it was held that vaccination was a complete and effectual preservative against the occurrence of small pox; and, in fact, at one time it would have been deemed a very great heresy to have entertained a doubt upon this point. The doctrine was, that the effect of cow pox under all circumstances, and for any length of time, would protect the individual in whom the true vaccine disease had been produced, from all danger of the variolous disease. Now, I am old enough to remember the publication of Dr. Jenner's work, and the first introduction of vaccination. Some years after it had been introduced, a question was proposed to Dr. Fordyce, (a celebrated physician and lecturer in London, a man of great experience, and considered to have a very sound head,) by some one who met him at a coffee-house that he was in the habit of frequenting—for he was rather fond of port wine, “Pray, Doctor, give me your real opinion about vaccination; what do you think of it?” The Doctor replied, that he should be very happy to tell the individual his opinion upon it “fifty years hence;” and in point of fact, in speaking upon a question of this sort, it requires a long series of years before we can give any satisfactory answer on the subject. Now it was held, for instance, that the protection which vaccination afforded to the constitution against the small pox would be as perfect at the end of 50 years as it was at the very commencement of the period. I need not observe to you, that that is a point which could only be observed by experience, so that until the period have elapsed, we cannot tell whether it is to be so or not. I believe I may say the general opinion now is, that

the preservative influence of the vaccine disease gradually wears out; at all events we find that the number of instances of failure (if we may so call them)—that is, the number of instances in which small pox occurs in individuals who have been vaccinated, becomes greater in proportion as the time intervening between the vaccination and the period of attack increases. In order to elude this difficulty, the advocates of vaccination have said, that small pox inoculation is only an imperfect preservative against small pox; that it happens sometimes that persons have the small pox after inoculation, and that there is secondary small pox, as well as small pox occurring after vaccination. That there are such cases is certain; but they are not so common as the others. Now I am not much in the habit of seeing these cases; however it has happened to me to see instances where the small pox has occurred after vaccination; but I never saw an instance of secondary small pox. We must allow then, that although persons are not justified in saying that the preservative influence of cow pox extends only to a limited time, yet we may say that, so far as we know, the preservative influence becomes weaker in proportion to the length of time that elapses from the vaccination. In the majority of instances where small pox occurs in individuals who have been regularly vaccinated, we find that the disease pursues a different course from the natural small pox; we find that it is milder—that its duration is shorter—that, instead of running through the regular series of changes that belongs to the natural small pox, it will stop all of a sudden at a certain point, and come to a premature end. But this has not been invariably the case; there are instances in which small pox occurring after vaccination has gone regularly through its stages, and even ended fatally. Still all that I can say for myself is, that I shall continue to recommend and practise vaccination although it may not so effective, so invariable, and so never-failing a preservative against small pox as it was heretofore considered. I shall do it for these reasons:—

*First.* The cow pox is a mild, and I might almost add, an insignificant complaint. Vaccination is attended with no danger, and hardly with any inconvenience, to the patient on whom it is practised; and that is generally on very young subjects. If, therefore, it should not be an effectual preservative, you may still adopt it, because there is so little inconvenience and risk attaching to it.

*Secondly.* In the great majority of cases, so far as experience goes, it is an effectual preservative against the small pox.

*Thirdly.* In the great majority of those instances in which small pox occurs after vaccination has been employed, it terminates favourably.

So that, for these reasons, I should recom-

mend vaccination to others, and practise it on children of my own.

The mention of small pox induces me just to draw your attention to a proposition made by the French, which I deem worthy of attention now, when cases of small pox are more frequent (perhaps in some measure, in consequence of an increasing want of faith in the cow pox) than they were some years ago. Some French writers have said that the application of lunar caustic to the variolous pustule in the early stage will prevent its development, cut it short, and prevent its proceeding to those unpleasant consequences which, particularly in the face, often lead to circumstances that are so afflicting to the individual. In the Archives Generales de Medicine, a French periodical work, Volume viii. there is a paper on this subject by M. Velpeau; it is entitled, "On the Employment of Caustic as a Mode of Arresting Variolous Eruption." It has been found by this gentleman, and others who have followed the plan he has pointed out, that if the lunar caustic be freely applied to the variolous pustules within the three first days (I may observe, that they do not deserve the name of pustules during this period of time, they are only pimples), however, making use of the term variolous pustule generally—if lunar caustic be applied within the three first days of the complaint, it will cut it short and prevent the progress of the pustules; and in the case of pustules that appear on the face, the eyelids, or other parts of the body that are uncovered, this plan may be adopted, so as to prevent their progress to those changes which are so disagreeable from the deformity which they leave. In some instances this method does not seem materially to interfere with the progress of the affection, but in others it abridges it, interrupts the regular course, makes it shorter, and in no instance in which it has been employed for this purpose has it been attended with any unfavourable effect. The progress of the pimples or vesicles, when the caustic is applied in the early stage, is completely stopped, and a small darken crustation is formed upon their summit. M. Velpeau observes that it is a curious and interesting sight to notice the difference between the pustules that are thus cauterized and those that are allowed to proceed through their natural progress; that while the latter go on to a state of full suppuration, and exhibit very large hemispherical prominences, with high inflammation of the base, the former shrink and disappear, and exhibit only a small superficial encrustation, just the effect of the application of the caustic, without any inflammation of the base of the pustule. The consequence of this sudden interruption of the progress of the local affection is, that the inflammation at the base is put a stop to, which is very important in re-



ference to the pustules that are formed upon the face.

Now, there was a woman lately under my care in this hospital with the small pox. I had the pustules on the face cauterized; but afterwards it turned out that this was a case of secondary small pox—that is, the individual had been vaccinated in whom at a certain time the variolous disease was cut short, so that I could not see the effect of the caustic, but it appeared to be according to the statement of M. Velpeau.

The modes of application that he speaks of are these; either to have a pin of silver or of gold, sharp pointed, and to dip it into a concentrated solution of lunar caustic, and with the pin to pierce the minute vesicles that may be formed on the summit of the variolous elevations, so that the solution may be applied to the interior of the vesicle—to cut off with a pair of sharp curved scissars the prominent part of the vesicle, and cauterize it with the nitrate of silver brought to a fine point; or, simply to take a portion of the nitrate of silver to wet the surface of the variolous elevations, and rub it over externally. These are the means adopted, and they are very simple.

Now, if this principle is applicable to the treatment of variolous pustules, no doubt it will be applicable to many other states or affections of the skin; and, indeed, M. Velpeau mentions that in the first instance he tried the plan on boils. Taking individuals in whom these were coming, he freely cauterized the swellings, and in some of them nothing but a minute elevation appeared; so that the free application of lunar caustic to these places suspended the inflammation of the boil, and occasioned it to diminish and finally to disappear.

At the same time that these proceedings with the lunar caustic were being carried on in France, an English surgeon made some experiments with it in a variety of affections. The gentleman to whom I allude is Mr. Higginbottom, of Nottingham, who published an essay on the effect of nitrate of silver in several complaints. He has lately published a second edition.

Mr. Higginbottom has employed the free application of the nitrate of silver, moistening the surface of the skin, and then rubbing it over with caustic, in phlegmonous erysipelas, whitlow, in erysipelas of the face, in inflammation of the absorbents, and in various local affections; and, as he states, with the most beneficial results. We should not, perhaps, *à priori*, have entertained the idea of rubbing over the inflamed surface of the face with lunar caustic, and turning the face of that black colour which we know that nitrate of silver will produce on the skin; but experience is the only test for these and all other matters of a similar nature; and although things may appear at

variance with general principles and received notions, if we find them hold good when we have tried them, we shall no doubt be able to reduce them to principles when we have investigated them, or we shall find that those principles, or supposed principles, which have been laid down, may require correction. The free application of lunar caustic to the face, in erysipelas, has been found to have the best effects in arresting and controlling the complaint. I remember seeing a case where there was excessive inflammation of the absorbents up the leg and thigh (I forget exactly from what local cause it arose), and in which the nitrate of silver had been freely employed upon the limb in the course of the inflamed absorbents; and, as far as I saw, with the most decided effects in putting a stop to the inflammatory action. The treatment appeared to me more beneficial than I should have supposed any other would have been, under such circumstances.

Then Mr. Higginbottom also speaks of the employment of nitrate of silver in other cases—to punctured wounds, bruises, leech-bites, wounds received in dissection, &c. In all these instances he applied lunar caustic freely, leaving the parts subsequently exposed to the air, to produce what he calls an *adherent eschar*. We find generally, in cases of wound, a kind of crust forms over it, to protect it from the air, and that it heals underneath; and the employment of lunar caustic, by Mr. Higginbottom, seems to be intended to assist in producing this external covering to those wounds, and thus to give an opportunity for the healing process under it. In small ulcers he has attempted to produce an external eschar in the same way; and there are a variety of cases in which he has used it with success. I cannot exactly say that I have read the second edition of Mr. Higginbottom's work; but I have read the first. It contained numerous hints worthy of attention; and I think you will find the second edition worthy of perusal, as giving a number of details respecting the employment of this powerful agent, in a way and under circumstances in which it has not hitherto been made use of.

#### LECTURE XXXVII.

*Ecthyma—Rupia—Impetigo—Acne—Lepra—  
Psoriasis—Strophulus—Lichen—Prurigo.*

THE term *ecthyma*, gentlemen, designates a pustular eruption, consisting of large pustules with inflamed, bright-red, and indurated bases. They are single, scattered over various parts of the body, not collected together in groups. They seem to form a kind of intermediate link between some other pustules, in which there is a more su-

perficul inflammation of the skin and boils; in which there is a deeper-seated inflammation, with sloughing of the cellular membrane. This form of eruption is sometimes seen mixed with some of the forms of syphilitic eruption, but more commonly it occurs as a consequence of a disturbed state of the digestive organs, or in constitutions that are debilitated either by long-continued disturbance of those organs or by any other causes.

### *Rupia.*

The affection which has been called *rupia*, is in some measure analogous to ethyma, inasmuch as it occurs either from syphilitic affections or in individuals of debilitated constitution. It is not, however, a pustular disease; in fact, it commences as a vesicular affection; there is a large and flattened vesicle, and the surface occupied by this subsequently forms an ulcer, which is usually of a circular figure. Now *rupia* is classed, by Dr. Bateman, among the vesicular affections of the skin, while, on account of the size of the vesicle, Rayer classes it among the bullæ—the bladders. When the vesicle has ulcerated, the discharge which is produced from the ulcerated part encrusts, and forms a yellow scab upon the surface. When the ulceration increases very rapidly, this scab assumes a peculiar form; for, in proportion as successive crusts are added to the surface of the ulceration, the scab enlarges at the base, in consequence of a fresh kind of deposition taking place. Thus the scab at last assumes a conical shape; the portion which existed originally forming the apex of the cone, and the base being formed by the layer last deposited. This difference has occasioned names to be given to the particular forms, as if they were distinct species—thus there is *rupia simplex* and *rupia prominens*, or that in which this conical projecting scab is formed. I think you seldom see *rupia* except in individuals who have had syphilis; I regard it, therefore, as a syphilitic symptom generally.

### *Impetigo.*

The term *impetigo* is given to an affection consisting of clusters of small pustules and inflamed patches of the skin. These are attended with a great deal of redness and itching, acquire a certain magnitude, break and discharge their contents, which form in thin yellow scabs on the surface of the part. These fall off, and leave the surface of the skin which they had previously covered of a bright red colour, itchy and sore, usually cracking or chapping from slight causes. You have a succession of these groups of pustules forming on various parts; and the affection sometimes becomes disseminated nearly over the whole of the surface of the body.

The causes of *impetigo* are, generally speaking, internal; but occasionally this affection is produced by obvious external irritation. Now the affections which take place in the hands of grocers, bricklayers, and washerwomen, are sometimes of this pustular character. Pustules are produced, as you well know, by the immediate local irritation of tartar emetic ointment; and groups of pustules or small boils, frequently form from the local irritation of blisters. Pustules, either singly or in groups, are frequently produced by the local irritation of poultices. Thus, when poultices are made of improper materials—as of bread which is sour, or of other substances in an acrid or rancid state—very often considerable inflammation of the skin is produced by their local use, and a pustular eruption occurs in consequence of it, which is very annoying to the patient, and often tedious to cure.

### *Acne.*

The term *acne* is employed by later writers on the diseases of the skin, to denote a tubercular inflammation of the skin, proceeding to suppuration, occurring on the forehead, the face, the neck, and the upper part of the chest. This is the affection which the French call *couperosé*. The nosologists have adapted the name to the part in which it appears. Thus the French writers call it *visage couperosé*, just as we speak in common language of having a carbuncled face. In this eruption, then, of *acne*, there is inflammation with tubercular elevations of the skin, which are of a chronic kind. After some time, these proceed to imperfect suppuration. They break, discharge, and then crusts form upon them; the tubercular elevations of the skin subside, leaving, however, marks or eschars. Several of these form, generally single, but sometimes in small groups, on the skin of some part of the face or forehead, more particularly in females; sometimes upon the neck and upon the upper part of the chest, and, unluckily, just so far down as ladies are wont to expose their persons: they seldom extend below the part where the dress begins to cover the neck. Intermixed with these elevations, there is frequently a morbid state of the sebaceous glands: about the face, and the other parts affected with the eruption, you see little black points, which, in fact, are the obstructed orifices of the sebaceous glands of the skin, intermixed with these tubercles of *acne*. Now you have a succession of these tubercles—that is, while some are suppurating and declining, others are forming; and thus they may go on for a series of years, keeping up this unpleasant appearance by their successive production.

In some instances these tubercles do not proceed to suppuration; ordinarily they are

chronic in their course—they do not quite suppurate. But in some instances they seem to retain their tubercular character, and form elevated indurations of the skin, disfiguring the countenance excessively.

By the term *acne simplex* is meant the tubercular elevations generally proceeding to suppuration. By the term *acne punctata* are designated those black specks which sometimes appear simply as the result of obstruction of the sebaceous glands; sometimes they lead to inflammation of the follicles connected with them, and to suppuration of the parts.

The term *acne indurata* denotes that form of the affection in which the tubercles do not proceed to suppuration.

*Acne rosacea*, the rose acne, is applied to that form of inflammation of the integuments of the nose which occurs in persons who indulge in eating and drinking; in fact, who are free livers. It consists of an inflammation of the integuments of the *alæ nasi*, and of the nose generally. The parts usually assume a bright red colour, become granulated at the margins and surface, and rise into large tubercular elevations, such as have been already described; and these proceed to suppuration, break, and form encrustations. In the first instance, that is, when this appearance first shews itself, the skin of the *alæ nasi* is of a bright red, almost of a fiery red. These constitute what is called a carbuncular nose; and although this is an affection which remains often during the life of the individual, the part assumes the same bright fiery red colour, with a sensation of heat and itching on mere exposure to the fire, or on taking spirits, or any article of food which excites the stomach considerably. At other times the part assumes a more livid hue; and in process of time the neighbouring skin, and this granulated part of the integument, also display a considerable number of livid and almost varicose ramifications of the capillaries. As the cause which produces this effect generally continues to be applied constantly, so the skin of the nose is maintained habitually in this state of inflammation. You have a succession of pustules, which break and encrust, and so they go on from year to year, often considerably thickening the integuments of the nose, and occasioning considerable enlargement of the glandular textures; in fact, there is a considerable augmentation of bulk in the organ generally, which must be chiefly referred to the capillaries in the skin enlarging, and thus increasing the glands, and thickening the cellular texture under the skin. Now when this is commenced in early life, and the causes that have produced it have been continually applied for a long series of years, very extraordinary growths are sometimes produced in this affection, constituting lobular appendages,

by which the organ is prodigiously increased in magnitude, sometimes with great inconvenience, so far as the passage of air through the nose is concerned, and even interfering with the motions of the lips in the taking food. In this enlarged state of the integuments of the nose, (and which has sometimes been called carcinomatous enlargement of the nose, or carcinomatous tumor, although there is nothing of cancer in the affection) you may safely employ the knife to extirpate the growth. It is simply enlargement of the sebaceous follicles and integuments. It is an enlargement of parts not important in themselves, and which, if not in a state of active inflammation at the time, may be freely dealt with by operation. I have seen several instances where considerable growths have been thus removed. You must endeavour to carve the nose so as to leave it of a tolerably good shape. The wound thus produced will generally heal favourably, and you rid a person of that which is not only very troublesome but which is a very conspicuous deformity, by such an operation.

The affections which constitute what are commonly called *tinea capitis*, *porrigo*, or scald head, are of the pustular kind, but as I shall have occasion to speak of them separately, I shall say nothing about them at present.

#### *Lepra.*

The *scaly* diseases of the skin are referred to three heads. In the first place, that which is called *pityriasis*, which is a very slight scurfy affection of the skin, generally occurring on the head of the new-born infant—the *pityriasis capitis*, or dandriff, a very slight affection. *Lepra* and *psoriasis* are the two other heads.

*Lepra* consists generally of circular patches of chronic inflammation of the skin, the borders of which are elevated, tubercular, and red, the centre being comparatively depressed. In those patches, which in the first place appear simply as a thickened inflammation of the skin, the cuticle, after a time, begins to separate in small portions, assuming a scurfy and scaly state, and afterwards scaly encrustations form upon them, sometimes to a very considerable thickness; sometimes they assume a bright shining appearance, at others they are of a dark colour. They generally come upon the knees and legs, and on the elbow and the forearm and arm. These are the common situations, but occasionally they spread extensively over various parts of the body; and there are individuals in whom such leprous patches continue through a considerable part of life; sometimes they are troublesome, being attended with heat, itching, and uneasi-



ness; at other times they are in a comparatively quiet state.

#### *Psoriasis.*

*Psoriasis*, which is another form of scaly disease, differs from *lepra*, although they approach to each other, and we find it difficult to make out the boundary between them. *Psoriasis*, however, affects the skin in patches of an irregular figure, not circular, but quite irregular. It has not the elevated border of *lepra*. The cuticle becomes thickened, cracks, and goes into a fissured state, and a slight thin kind of encrustation is thus formed upon the surface of the part. This is usually detached, for it does not adhere so firmly as in *lepra*, and it leaves a red and sore state of the integuments under it, a state in which the skin easily fissures or cracks, and in which the ordinary motion of the part forms such cracks, so that you have not simply the common irritated state of the skin with encrustation adhering to it, but also fissures and chaps proceeding to a considerable depth, and producing considerable pain.

There is one form of *psoriasis* which cutaneous nosologists call *guttata*. This is first seen in small dots over the skin, seldom exceeding the diameter of two lines; it approaches a good deal to *lepra*, and forms a kind of connecting link between the two affections. Now *psoriasis* seems, in many instances, to be produced by local causes, for it will affect certain parts of the body without extending to others. There is *psoriasis labialis*, in which the state that I have described affects the lips. Then there is *psoriasis præputii*, affecting the prepuce in male subjects. There is also *psoriasis palmaria*, affecting the palms of the hands. This is sometimes extremely troublesome, as it frequently takes place in individuals whose usual occupations are attended with some particular pressure or irritation of the palm of the hand, and thence arises the affection; in other instances, it takes place in persons who do not follow mechanical operations of that kind, and in whom we cannot trace any local causes. The skin, in such instances, becomes inflamed in patches; the thick cuticle cracks and fissures, becomes dry, harsh, and uncomfortable. The cutis under it also cracks, and particles of dirt or other substances finding access, produce considerable uneasiness. This is a form of the affection not uncommonly seen in washerwomen, in consequence of the soap and alkalies which they use; the alkaline substances which they use in cleansing the linen habitually increasing eruptions of this kind.

#### *Lichen.*

The *papular* diseases of the skin consist of elevations of the surface of the skin, which

are solid; there is no effusion of lymphatic fluid, nor of pus, but the elevations are either red and inflamed, or of the same colour with the natural skin, and they are particularly distinguished by the very troublesome itching which accompanies them; in fact, itching seems to be the particular modification of pain which accompanies disease affecting immediately the skin itself; and in all those affections in which the proper texture of the cutis vera, or true skin, is engaged, you generally find more or less of that peculiar degree or form of sensation called itching. Those elevations of the skin which constitute papulæ, generally end in resolution, that is, they disappear, they go away entirely, or end in slight desquamation; and sometimes an affection, which is originally papular, may form small vesicles or pustules before it disappears.

You read sometimes of the term *strophulus*, or red gum, as given to an affection of this kind in children, arising from a variety of causes, as dentition, derangement of the digestive organs, and so forth.

The term *lichen* is given to an eruption of inflamed papulæ occurring in particular parts of the body, or extending more or less generally over the whole surface in young persons or adults, and attended, in many cases, with an almost constant and intolerable itching. The patient itches to such a degree that he scratches the skin with his nails, or rubs it with brushes, or even tears it with combs, to get some relief from the annoyance which the itching produces. This is frequently produced by external heat, and hence it is found to be an affection exceedingly troublesome to those Europeans who have visited tropical countries.

*Lichen tropicus* is the name given to an affection of this kind, which sometimes occurs in persons visiting the East and West Indies; the eruption produced by the heat of those countries is often called the *prickly heat*: it is attended with an itching, the most severe and intolerable that can possibly be conceived.

#### *Prurigo.*

*Prurigo*, as the name imports, is an eruption attended with excessive itching, for that, in fact, is the meaning of the term, but the papulæ, or pimples, are of the natural colour of the skin; they are not red, as in *lichen*. They may extend generally over the body, or be confined to a particular part. Sometimes it is milder, sometimes more severe. There are several varieties of this affection. There is *prurigo mitis*, and *prurigo formicans*. It often exists in elderly persons, constituting the *prurigo senilis* of Dr. Willan. Sometimes it affects particular regions of the body, as the anus, for example, constituting *prurigo podicis*; or the entrance of the

female organs of generation, when it is called *prurigo pudendi muliebris*.

Now I do not consider it necessary, nor, in fact, would it be attended with any advantage, were I to enter into a lengthened description of the complaints of the skin that I have just mentioned generally, unless we had an opportunity of pointing them out in patients, and shewing their differences; it would be quite tedious to go over all the various species which nosologists have distinguished. You will be immediately aware, that in their essential nature there is no great difference among these, although they are distinguished by different names; in fact, in these various affections of the skin, we see only different modifications and different results or effects of inflammation. We see either the simplest kind of inflammation, consisting merely in vascular distention—efflorescence; or a higher degree, in which there are papular inflammations and elevations of the skin; or a still higher degree, in which there is the formation of vesicles; or a yet more advanced degree, in which there is the formation of pustules; or other kinds of affection, in which there is the formation of scales—the scaly diseases of the skin; but yet the essence of each of these is similar.

Now these inflammations of the skin, like inflammations in other parts of the body, may be acute or chronic—that is, you may have active vascular distention, increased redness, considerable pain, heat and itching of a part; and you may have sympathetic effects produced on other parts of the economy, corresponding to these—that is, where there are considerable portions of the skin affected, you have excitement of the vascular system and of the digestive organs. In other instances the local affections, and general sympathetic influences, are less considerable; these are chronic affections of the skin.

The causes of these different inflammations of the skin are very various. In a great number of instances we see them produced directly as the immediate effect of local irritants upon the skin. This is evidenced in the pustules and superficial sloughs caused by the application of tartar emetic ointment; by the effect of direct solar heat—*eczema solare*; by the effect of mercury applied to the skin—*eczema mercuriale*; by the groups of pustules seen in *ecthyma*; by boils and carbuncles; by the effects produced by the irritation of blisters, setons, and various other applications, to the skin; and by the scaly, or pustular, or vesicular affections, which constitute the grocers' itch, or the bricklayers' itch, and the complaints affecting the hands and wrists of washerwomen. In other instances we see that the complaints of the skin are produced by direct applications to the body of some morbid secretion,

or of contagion in some shape, as in itch, and in the exanthemata properly so called—that is, measles and scarlet fever, small pox, cow pox, and chicken pox. In other instances affections of the skin are the consequences of poison introduced into the system, as in syphilis; and here you observe that the poison, if we should deem it such, is capable of producing almost all the forms of cutaneous affection; it will produce pimples, tubercles, scaly eruptions, pustules, and ulcerations. In some instances we see affections of the skin obviously produced by disturbance of the digestive organs, as urticaria, or nettle rash, in various parts of the body; the acne rosacea, certain forms of psoriasis, and various other diseases of the skin, are obviously produced by that cause. Still a great number of affections of the skin remain, in which we are unable to point out the direct exciting causes; and these must be produced by some internal cause, the exact nature and mode of operation of which are hitherto not accurately ascertained.

[This concludes the history of cutaneous diseases. We shall give the treatment in our next number, so that the subject will be continued at page 161—opposite.]

#### LITERARY ANNOUNCEMENTS.

Dr. A. P. W. Philip has in the press, a Treatise on the Nature and Cure of those Diseases, whether Acute or Chronic, which precede Change of Structure; with a View to the Preservation of Health, and particularly the Prevention of Chronic Diseases. In 1 Vol. 8vo.

Dr. Ure has in the press, a New Edition, nearly re-written, of his Dictionary of Chemistry.

#### NOTICES.

The case of Hernia, from Brighton, does not appear to present any circumstance of sufficient interest for publication. Any more interesting cases we shall be extremely glad to have.

"T." was accidentally omitted last week; we shall attend to it hereafter.

"Veritas," of Manchester, is informed that we cannot possibly contradict, on anonymous authority, a statement bearing the writer's name.

"Norfolciensis."—We shall inquire.

"A Constant Non-Medical Reader."—Various cases of pytalism, from crude mercury, are on record. We have ourselves seen it, where the quicksilver was used empirically for rheumatism, in drachm doses, every night for three weeks.

W. WILSON, Printer, 57, Skinner-Street, London.

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SATURDAY, MAY 1, 1830.

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## LECTURES ON SURGERY,

*Delivered at St. Bartholomew's Hospital,*

By WILLIAM LAWRENCE, F.R.S.

### LECTURE XXXVII.

[Concluded from the preceding page.]

#### *General Observations on the Treatment of Cutaneous Diseases.*

THE treatment of acute inflammations of the skin must be like the treatment of acute inflammation situated in any other texture of the body. You must employ antiphlogistic means. Occasionally you find it necessary to take blood by venesection, and in many instances to apply leeches to the affected part; and here I may observe, that you need be under no apprehension of the local effect of the leech-bites on the part that is the immediate seat of inflammation. In these cases, the same observations which I made respecting the application of leeches to parts affected with erysipelas, are equally true as regards leech-bites in other affections of the skin. With these means you combine the other parts of antiphlogistic treatment; that is, perhaps, pretty active purging and low diet; at all events, you take care that the patient shall exclude from his diet all stimulating articles, whether of a solid or a liquid kind. In conjunction with these general means, in cases that require that kind of treatment, you employ local measures of a soothing nature, such as are calculated to reduce the inflammation. Hence you apply sometimes cold washes to the inflamed part, such as saturnine lotion; or spirituous lotions with vinegar—2 ounces of vinegar to 8 ounces of the lotion. This is a form which is sometimes not only calculated to lessen, and thus to check inflammation generally, but also to alleviate the itching, which frequently is very troublesome in these cases. Tepid ablution, fomentations, the general warm bath, or rather, I should say, the tepid

bath, are occasionally useful. There are instances in which the cold-bath is advantageous; for instance, where the troublesome itching would be aggravated by warm applications. Soft poultices, mild unctuous applications, the ceratum cetacei, elder-flower ointment, or that mild kind of preparation made by perfumers, called cold cream—these are the mild soothing applications which are proper in inflammation of the skin in the active stage, in which it is found necessary to employ antiphlogistic treatment.

In chronic inflammation of the skin you employ a similar kind of treatment in a milder way. It is sometimes advisable to take blood generally even in what we call chronic inflammation of the skin; for we frequently find a state of great plethora keeping up the disease;—and you combine with this the pretty active use of aperient medicines—calomel, the extract of colocynth, and other forms that I have already spoken of. You may occasionally employ leeches to the inflamed parts with advantage even in chronic affections of the skin. More generally, however, you find that in chronic inflammation of the skin it is sufficient to regulate the digestive organs, and to pay attention to diet. In saying this, I do not mean that you are to purge every patient that has inflammation of the skin actively, or to put every patient upon low diet. It is sufficient to pay attention so as to exclude from the diet exciting or stimulating articles; generally speaking, patients should take fermented liquors sparingly under such circumstances, and a smaller quantity of animal food than what they take in a state of health. They should take what is called light diet—farinaceous articles, with a moderate portion of animal food. In the same way you must pay attention to the bowels. Though patients require sometimes the active exhibition of purgatives, they will usually require only mild alteratives and mild aperients. You will understand, however, that all cases of affection of the skin are by no means to be cured by attention to the state of the digestive organs alone. This is a point that is



always of importance to be attended to ; it must never be neglected. But there are numerous cases of serious diseases of the skin in which the stomach and digestive organs are in their natural state ; and there are many instances in which they continue so throughout the complaint, and yet the diseases of the skin go on in the same way. We are by no means to understand that active purging is always necessary, and that attention to the digestive organs will always cure the disease, and still less will it always be advantageous to employ mercury in such cases ; in fact, in chronic inflammation of the skin, when we have regulated the state of the digestive organs, and put the patient on a proper diet, we find it necessary to pay attention to the local treatment of the case, as local means are capable of doing a great deal, particularly in instances where there is much itching and irritation of the skin. I have already mentioned that the application of acetic acid, in the form in which it is found in common vinegar, is sometimes of use. Now it has been found advantageous to employ this remedy in a stronger form than that in which it exists in common vinegar. Mr. Wilkinson, who has written a small but sensible pamphlet on cutaneous diseases, attending more to the general principles which are to be observed in their treatment than to the minute distinctions of all the various shades of these diseases, recommends acetic acid in a strong form, as an occasional application to the skin where the itching is exceedingly troublesome. I think he employs the aromatic vinegar, which is merely the concentrated acid, mixed with about one-half of rose-water. When you employ it in this way, you must have the surface cleansed, and merely dab it over with the acid. The acetic acid, in its strong form, is capable of acting as a powerful escharotic. Dr. A. T. Thomson, who has edited recently an edition of Dr. Bateman's Synopsis of Cutaneous Diseases, has recommended the hydrocyanic or prussic acid, in the proportion of one or two drachms to about eight ounces of emulsion of bitter almonds, or in other forms, to be employed in the same way to the surface of the body, as means of alleviating the troublesome itching. Then, in all cases of chronic cutaneous affections, cleanliness, frequent ablutions, and the employment of the warm-bath, are of very great importance. Carefully cleansing the surface is essential, because it affords us the means of examining and applying whatever active substances we may use to the part that is diseased ; and the warm-bath has the further beneficial effect of maintaining an active state of the capillary circulation in the skin generally. It is thus calculated to correct, in the parts particularly affected, the local excitement which prevails in them. We may say there-

fore generally, without adverting to particular diseases, that a frequent use of the warm-bath is a very powerful auxiliary, whatever other plan of treatment we may deem it advisable to adopt.

We find it necessary, when these affections go into a chronic state, to employ means locally, which are of an exciting or stimulating character ; and thus we are enabled to produce changes in the condition of the skin, in instances where the disease has lasted for some time—where deposition has taken place into the texture of the skin, and where there is an incipient change in the structure of the parts. Thus in the indurated stage of acne, where we can do no good by antiphlogistic treatment, or other means of that kind, the red precipitate ointment, in a mild form, (ten or fifteen grains to half an ounce of lard, made into an ointment), may be employed advantageously, rubbing it once or twice a-day upon the affected parts. Rayer, and some other foreign writers, have recommended strongly an ointment containing a considerable proportion of calomel, particularly in scaly affections of the skin ; but I have not seen it employed. He recommends a scruple of calomel to an ounce and a half of lard, to be rubbed on the part. By this application, Rayer says that he has succeeded in arresting various affections, where the application of other means had failed. The oxymuriate of mercury, in solution, is a powerful local application in these cases ; and perhaps it is most efficacious when it is used in solution, in conjunction with alcohol. Thus, in eight ounces, there may be two ounces of alcohol ; and you may employ from one to two grains of oxymuriate of mercury to the ounce, beginning with the smaller quantity and gradually increasing it, and applying it to the affected parts once or twice a-day, or more frequently. This is considered to be the base of a quack medicine which has attained great celebrity, under the name of *Gowland's lotion*. The oxymuriate of mercury is there used in conjunction with emulsion of bitter almonds. The oxymuriate of mercury, dissolved in strong acetic acid, has been found a useful application in some obstinate forms of psoriasis. When psoriasis affects the palm of the hand, it sometimes extends to the nails, which become altered in colour ; they split, and become incurved at the end ; they assume altogether an unnatural appearance, in consequence of inflammation of the part which produces them ; the unhealthy nail separates, and another as bad succeeds it. The oxymuriate of mercury, in the proportion of one, two, or more grains to the ounce of acetic acid, has been employed efficaciously in this form of psoriasis. I have seen it stated, that some cases of psoriasis, affecting the palm of the hand, have been

efficaciously treated by the application of concentrated nitric acid to the part. This is only to be employed very carefully. You must first soak the surface, and then, after drying it, you must lightly and superficially apply the acid to the part with a piece of lint wrapped round a probe dipped into the acid. It has been said that the morbid cuticle is thus thrown off, and a healthy skin produced, in consequence of such application. I have not seen it used myself. There is a strong local application of this kind occasionally employed by the French, in some obstinate cutaneous diseases, of the immediate effect of which I am not able to speak. It is the nitrate of mercury. It is used in the Hospital Salpetriere, in Paris, where a great number of cutaneous affections are constantly under treatment. It is made by dissolving a drachm of red precipitate in an ounce of nitric acid, and is to be employed in the way I have just mentioned; that is, superficially, just applied on the surface of the part, unless you want to employ it as an escharotic, to destroy the surface, when of course you may use it more freely, in order to produce a slough of the part. Sulphur, as a local remedy, has been generally considered to possess considerable power in the treatment of diseases of the skin. Thus the natural sulphureous waters in various countries have become celebrated in the treatment of these diseases. The Harrowgate waters of this country certainly, in many cases, produce beneficial effects where, perhaps, our regular treatment has failed. The hydro sulphuret of potash may be employed, dissolved in water, and should be used in solution, in the proportion of one or two drachms to a pint of water, in cases where we cannot give the patient the advantage of the employment of natural sulphureous waters. The sulphur ointment may be employed for the same purpose, and sulphur may be also used in vapour, as in the sulphureous vapour bath. Tar is another remedy that is considered efficacious in diseases of the skin. Frequently tar, with sulphur ointment, are combined together in equal proportions. The citrine ointment is also used. Sometimes tar and citrine ointment are mixed together. We are obliged frequently to alter the applications, as they lose their effect when repeated for a considerable time. The nitrate of silver, either in solution or in substance, is another local application of considerable power.

I should have mentioned to you, with respect to the internal treatment in these cases of chronic cutaneous affections, that occasionally there are obvious signs of disturbance in the stomach from acidity, a defect in the digestive process, under which the internal exhibition of alkalis is of considerable

advantage. It is seen occasionally in cases of the acne; it is also seen in cases of psoriasis. Here the liquor potassæ may be given internally, but in rather larger doses than it is commonly employed; a drachm, for instance, and from that to a drachm and a half, three times a-day. Dr. Thomson recommends the exhibition of it in emulsion of bitter almonds, as a vehicle, or that it be given in combination with a tonic, such as infusion of cascarrilla. In some cases, particularly of scaly affections of the skin, which have existed for a considerable time, and resisted other means of treatment, arsenic may be employed internally with advantage—the liq. arsenicalis of the London Pharmacopœia being the form generally used. We cannot explain how this acts. We see in some cases, of lepra particularly, that it is beneficial, and hence it is given empirically. I need not observe to you that it is necessary to employ this remedy with caution; that it is capable, when used for a length of time—and these cases do not get well quickly—of producing serious effects on the animal economy. Its exhibition should be carefully watched; you should begin with very small doses, three or four drops two or three times a-day, cautiously increased. This remedy, however, internally, and a solution of oxy muriate of mercury in distilled water externally, seem to possess a considerable and peculiar power in certain chronic affections of the skin.

Now there are instances in which in some affections of the skin the patient is debilitated and enfeebled, and in which nothing like antiphlogistic treatment can be properly had recourse to—where we find it necessary, perhaps, to give the patient rather a good diet than otherwise, and to employ tonics, as mineral acids, and vegetable bitters, such as bark and sarsaparilla. In fact, in the treatment of affections of the skin you must be aware that, as in other diseases, you cannot lay down one, two, or three invariable rules; you must direct both the general and local treatment according to the condition of the patient, and the time that you employ them.

In concluding these general remarks on diseases of the skin, I beg again to advert to a point that I have already spoken of—the great advantages, under all circumstances, of attending to keeping the skin clean by the assiduous use of tepid ablutions, or the warm bath.

#### LECTURE XXXVIII.

*Tinea Capitis—Porrigo—Elephantiasis—Lupus.*

GENTLEMEN,—The terms *Tinea* and *Porrigo* are employed, technically, to designate the

same affections of the hairy scalp which are popularly called *scald head*, and sometimes *ringworm* of the scalp. *Porrigio* is the term employed by Drs. Willan and Bateman, and hence it has been generally adopted as the scientific name of these affections. The English term of "*scald head*" does not indicate any notion of the affection being connected with the operation of heat, or being at all the effect of scalding; but it is a term derived from an old English word, and means scab or encrustation—so that *scald head* in this sense means scabby, or encrusted head. The term *ringworm*, I believe, was originally applied to a particular form of eruption, which I have already had occasion to mention under the name of *herpes*—which is a vesicular eruption. In one of its forms the vesicles assume a circular arrangement, the interior of the circle being imperfect. It is called *herpes circinatus*, and the vesicles, when thus arranged, have the appearance of rings—hence the name *ringworm* given to the affection in common language. In one form of psoriasis, also, the inflamed and scaly state of the skin resembles a narrowish line, which usually assumes an imperfect spiral form; it has been sometimes called *ringworm* in common language; but the *ringworm* of the scalp is a certain form of the affection that I am now going to describe to you, in which the inflamed and pustular part exists in circular patches.

Now under the term of *porrigio*, Drs. Willan and Bateman include some other affections of the hairy scalp besides those to which the familiar name of *scald head* is applicable. They include some other affections which, in fact, have very little resemblance in their nature with *scald head*; and probably when these affections have been more minutely investigated, some of the complaints which they include under that term will be separated from the head of *porrigio*.

*Porrigio*, or *tinea capitis*, is an inflammation of the hairy scalp generally, commencing in patches, in which you see the formation of groups of minute pustules—pustules which are seated in the substance of the skin of the scalp. Now these pustules generally assume a peculiar appearance—they are very small in size, and produce a peculiar kind of secretion: they are such pustules as nosologists have distinguished by the term *achores* and *favi*. By the term *achor* (of which *achores* is the plural) a pustule is designated which is circular, minute in point of size, imbedded in the skin, and which produces a thick, and at the same time nearly transparent secretion, which has been compared to honey, which, when it exudes from the pustule, encrusts in a clear but firm kind of scab. The term *farus* is applied to a pustular affection of the scalp,

which is larger in extent, but produces a similar kind of secretion—a secretion similar in its sensible characters, and resembling it also in the circumstance of forming a firm yellowish crust.

The secretion which takes place from the groups of pustules which constitute the state of *porrigio*, forms in the first instance thin scabs, varying in size and in figure. In proportion as the disease proceeds, the continued exudation from these pustules adds to the thickness of such encrustation, and thus you have them enlarged in size, so that they become considerably elevated above the surface of the skin. These affections, if they are not well attended to, go on for several years, and thus you frequently see an individual whose head is covered over with bumps of encrustation—you have the masses of encrusted secretion rising considerably above the surface, and presenting altogether a very strange appearance. In some instances the scabs which form on these pustules have a depression upon their surface—a cup-like indentation. When they have increased in size and form, the elevated masses that I have just mentioned have been compared to various objects, and thus different names have been given to different forms of the complaint, derived from the appearance which the encrustation exhibits. Where there is a number of these encrustations with the cup-like indentation on the surface, they have been compared to the appearance of honeycomb: hence the name *porrigio favosa*—honeycomb scall. Sometimes it is said they are like the seeds of the lupine, and the affection has been called *porrigio lupinosa*. There are other instances in which, without rising so high, the encrustation forms circular scabs, and this constitutes the species termed *porrigio scutulata*. Now I do not apprehend that these various names indicate any essential difference in the nature of the disease—they are merely terms applied to modifications of form.

In the first instance the pustules appear to form on the scalp, in the intervals of the hair; but as the disease proceeds, the bulbs of the hair become involved, and are destroyed by the ulcerative process; so that when the complaint has existed for a length of time, and you come to loosen and separate from the head this long existing and firm encrustation of the scab which I have just described, you will find that a great proportion of the bulbs of the hair are destroyed, and, in fact, that the hair never grows again in that situation. When the disease has existed for a length of time, you find sometimes, even in young subjects, that the hair is completely destroyed, and that the scalp is left ultimately, if you succeed in curing the complaint, just as it is in the head of an old person who has



lost all his hair—the hair is entirely removed by the complaint.

The progress of this affection is of course much favoured by the neglect of cleanliness. Thus you find that some of the worst cases occur in children of the middling and lower classes, the latter particularly, where a proper attention is not paid to cleanliness; and frequently the disease which is produced on the scalp is materially aggravated by the additional irritation caused by numerous vermin—for they seem to breed and propagate most excellently in this state of the scalp.

It frequently happens that in this disease the lymphatic glands, through which the absorbent vessels of the scalp pass, become enlarged. Thus you have enlargement of the lymphatic glands seated behind the ear and along the neck.

This affection generally commences in, and is confined to, the hairy scalp; but it may extend from this to the neighbouring skin, and, in fact, over the whole body; so that you frequently find the same kind of appearance over the body which characterizes this disease when it is seated on the scalp—at all events the appearance is somewhat similar in its nature. It is said that this propagation of the disease over the body is produced by a kind of inoculation; that the patient scratches his head, which is the original seat of the disease, and having the matter on his nails, and applying them to other parts of the body, he inoculates those parts. But whether it arises in this way, or from other causes, it is not easy to determine.

Porrigio is considered to be a contagious complaint—that the matter which is secreted by the pustules of the inflamed scalp, applied to that of a sound person, is capable of producing the disease; and thus it is found very often, that a child affected with this complaint going into a school will communicate the disease to many others, and that, in fact, often under such circumstances the disease will run through all the inmates of the establishment. I believe it is not ascertained that all forms of the disease possess this contagious property; it is, however, generally agreed, that that form which is called porrigio scutulata, in which there is a circular portion of inflamed skin, with groups of pustules, and rather a superficial encrustation forming upon it, at all events is contagious. I suppose we cannot very safely trust in practice to the non-contagious nature of the other forms, so that I should be inclined, practically speaking, to act on the idea that all states of this pustular disease of the hairy scalp are capable of communicating the affection from one individual to another.

It has been represented by some of those who have great experience in these com-

plaints, that one form of the disease will produce in another individual a different form—that is, supposing one to have porrigio scutulata, it will produce one form of the disease in one person, in a second another, and in a third another; so that the form produced does not so much depend upon the exact nature of the matter communicated as on some circumstance existing in the constitution of the individual in whom the disease occurs. This is a point, however, not yet very accurately ascertained.

Now inasmuch as this disease, in a great proportion of cases, arises from contagion, so of course you do not always see any circumstances in the health of the individual capable of giving rise to it; you find, in fact, in many instances, that this affection arises and exists for a great length of time in children who are perfectly healthy, who have a good appetite, in whom there is a regular performance of the digestive functions, and in whom all other parts of the economy seem in a natural and healthy state.

It has been a question whether porrigio must actually proceed from contagion, or whether it may be developed originally under any particular combination of circumstances independent of contagion. On this point I have not, for my own part, any facts capable of elucidating the question; but I find that some of those who have seen the affection very extensively, are of opinion that porrigio may arise in an individual under particular circumstances, either of the state of health of the individual, or of the circumstances in which he is placed, independently of the actual communication of infectious matter.

The treatment of this disease cannot be conducted on one and the same plan under all circumstances. You have, in the first instance, an active inflammatory complaint; the period of inflammation passes by, and you have then a long chronic stage of the disease. You would not find one and the same treatment advantageous in the period of active inflammation and in the chronic stage. In the inflammatory stage you must employ an antiphlogistic treatment: you may find it necessary to put on leeches—to apply them behind the ears, or on some part of the inflamed scalp. You may apply cold applications, as saturnine lotion, or spirituous lotions, to diminish the temperature of the inflamed skin;—you may apply soothing applications, tepid ablutions, or warm fluids of an emollient kind, such as warm water poured on bran, or milk and water, and mild unctuous applications. These, combined occasionally with bread and water poultices, are the applications to the state of inflammation. With these means you would unite such mild internal remedies as are calculated to lessen the inflammation. It is a matter of great consequence to keep the surface of the affected part clean and free from

the discharge which is produced: there is some difficulty in accomplishing this, in consequence of the discharge being retained by the hair—the hairs become matted together, scab, and encrust. Now it has generally been said that you should have the hairy scalp regularly shaved and cleansed; but you cannot have the scalp of a child, when active inflammation exists in it, shaved: the irritation of the operation would rather aggravate the complaint: in that state of inflammation, therefore, you must be contented with cutting the hair short with a pair of scissors: you thus bring it to a state in which you can easily cleanse the part, so that you do not want the actual process of shaving. When you come, however, to the *chronic* stage of the affection—when the skin is no longer in that condition of tenderness which is produced by active inflammation—the regular operation of shaving may be performed. But even here the question would seem to be, whether in that state of the skin it is wise to adopt the process, or whether the slight wounds and irritation inseparable from the process may not actually produce greater mischief than the removal of the hair will accomplish benefit. Under such circumstances, you must be contented to cut the hair short with scissors. Now very rough methods have been recommended with a view to getting rid of the hair from the diseased surface: thus it has been recommended to apply rags spread thickly with ointment, principally composed of pitch, and when these have become fixed, you are to tear them off with the hair attached to them, and to repeat this process till you have got the scalp clear. This is a rough and unscientific mode of proceeding, and I cannot at all recommend it. Again, it has been recommended to take forceps and draw the hair out by the roots; but this is equally objectionable, and indeed is hardly a practicable proceeding. Lately, in France, they have adopted a plan for applying what are called *depilatory* substances to the affected scalp—substances which have the effect of loosening and destroying the hair: the active part of these chiefly consists of quick lime.

The mode in which these depilatories are used is, in the first instance, to apply linseed or other poultices to the surface of the head, and to wash the part very carefully with soft soap and water every day; and thereby, in the first place, to get rid of all scabs and encrustations, and then to apply over the surface thus denuded (having cut off the hair as close as you conveniently can with scissors) this depilatory substance. There is a formula of this kind given in the work of Rayer, in which he directs that one ounce of lime should be combined with two drachms of the subcarbonate of potash and one drachm of charcoal, and mixed with as much lard as will make an ointment, which is to be spread

thickly over the infected parts. A certain quantity of hair will come off; and this application is to be repeated until the surface is completely denuded. Another formula of such depilatory applications consists of twelve drachms of quick lime, ten drachms of starch, and one drachm of sulphuret of arsenic, (a bright yellow substance), and this is to be employed in the same way. I have not seen these depilatory applications used, but I should conceive, if they be capable of removing the hair, that this is a much more eligible mode of accomplishing that process than by the application of pitch, or the method of tearing out the hair by the roots by means of the forceps. But of course it is only to be employed in those instances in which the state of the scalp prevents you from removing the hair by the shorter mode of shaving.

When the complaint is in the *chronic* stage, then we can safely employ those active and stimulating substances of which I have already had occasion to speak to you. The sulphur, tar, and mercurial ointments, are perhaps the best for these cases, and they are commonly used in combination, any two being united together in equal parts. They should be spread pretty thick, and applied tolerably copiously, the diseased surface itself having been previously well cleansed by means of soft soap and water. Then the head should be covered with a light linen cap. The plan which is generally employed in these cases, that of placing an oil skin cap on the scalp, is objectionable. It confines the perspiration, irritates the part, and heats the head. The tar ointment is not unfrequently used, and with considerable advantage, in these cases; and sometimes it is rendered more active by the addition of the sulphate of copper; two drachms of sulphate to one ounce of the tar ointment. Then various astringent substances are applied, in the shape of lotions, in these affections. I may mention that the lotion of acetic acid, which I spoke of in my last lecture, is occasionally used, the parts being lightly sponged over with it before the tar and sulphate of copper ointment, for instance, are applied; and if we suppose that the ointment has been put on tolerably thick, it may be left on for two or three days, and it is only necessary to use the acetic lotion at such times as you apply fresh ointment. The nitrate of silver, in solution, is a useful remedy in these cases, in the strength of from two to ten grains to one ounce of distilled water. That is to be applied in the same manner as the acetic lotion, the parts being previously cleansed, and then sponged with the solution, after which the ointment is to be applied.

The complaint that I am now speaking of has prevailed extensively in a neighbouring institution to this—Christ's Hospital. A great number of the inmates of that establishment have suffered from it

in different forms, and a vast deal of trouble it has been to the medical attendants, who have very frequently applied a lotion of an astringent kind with considerable benefit. The lotion is not very unlike ink. It consists of four ounces of decoction of galls, half an ounce of distilled vinegar, two drachms of sulphate of iron, and one drachm of acetate of copper or verdigris, used as a lotion to the parts of the skin that are affected with this disease.

Such are the means that may be employed in the chronic stages of *tinea capitis*, or *porrigo*. The complaint is a very obstinate and troublesome one, and a great deal will depend on the careful application of the local means that are used in its treatment. In a great majority of instances you can do no good whatever by the employment of general means. You find the disease existing in children that are quite healthy, where you can gain no ground by attention to diet or internal medicines, the children being already healthy; therefore much depends upon the careful administration and application of local measures. You must take care that the surface be thoroughly cleansed, that the hair is not suffered to grow, so as to assist in the retention of the morbid secretion, and to add to its accumulation into crusts; and you must ascertain that the substances you direct to be employed in the form of lotion or ointment are carefully and diligently applied; and if you follow up this regularly, you will then succeed in getting the complaint at least into a tolerably quiet state; but the complete and radical removal of the disease is often a matter of great difficulty, with all the means you adopt, and all the pains you can bestow upon the subject.

Drs. Willan and Bateman mention another form of the disease—*porrigo furfurans*, which means a branny or scaly *porrigo*. Now a simply scaly state of the hairy scalp is an affection totally different to inflammation with pustules; and therefore if *porrigo furfurans* be *aborigine*, a state of the skin abounding with a branny desquamation, it must be a different disease from the pustular affection. We may observe, however, as the pustular affection advances towards a cure, a condition of the scalp commences in which there is some hardness of the parts, and in which there is a state of exfoliation of the cuticle, lasting for a long time. The part appears tolerably healthy, but if you rub it with the finger you raise a number of branny scales upon its surface. I believe, however, that besides that form of the complaint which originally is pustular, there is a kind of chronic inflammation affecting the scalp, with branny desquamation of the cuticle, without the formation of pustules. I do not know that you can do more in this case than employ the local stimuli that I have just mentioned, having the part previously cleansed by shaving and ablation.

But with respect to the state of desquamation which is consequent upon the *porrigo furfurans*, the affection may be kept up by the long continuance of different applications. If you suspect that, you had better confine yourself simply to ablation and soft ointment, to keep the parts soft and pliant.

Then these authors mention another affection of the scalp, which is very singular; I think it is not allied to the preceding, although they have given it the same name—*porrigo decalvans*. It consists in a falling off of the hair from patches of the scalp. There is no inflammation, no formation of pustules, but a gradual loss of hair; and ultimately that part of the scalp which is thus affected becomes of a bright shining white, the bulbs of the hair themselves disappearing, and the scalp appearing like the top of the head of an old bald person. Perhaps in the early stage of this affection, by shaving and keeping the part clean we may stop the complaint, but it is rather doubtful whether we have much power of influencing this affection at all.

There is another affection, mentioned under the name of *porrigo*, which begins on the face, and principally affects that part, and which is characterized by an appearance similar to the pustular *porrigo* on the scalp. This is called *porrigo larvalis*, or *crusta lactea*. Now the name of *crusta lactea* designates two leading circumstances in the nature of the complaint. First, the formation of crusts upon the affected part; next, its occurrence during the period of suckling, hence called milk crust. This is an inflammation of the skin commencing upon the chin and about the face, leading speedily to the development of numerous small pustules, called *achores*, the discharge of which forms a thin yellowish scab, but the discharge is not so thick in its nature in this case as in the *achores* of *porrigo*; it is more fluid, and hence the French writers have called this *teigne muqueuse*. The discharge commences under the encrustations thus formed, and exudes from the margins, the encrustations themselves becoming thicker and larger. The affection extends from the original situation on the cheeks and face to the forehead, to the neck, and very often it gets over the whole of the body. It occurs not uncommonly in children of gross habit, who are over-fed, and in whom an unhealthy state of the digestive organs is obvious; sometimes it is produced as the direct effect of local irritation. Thus it will occur in consequence of *strumous ophthalmia*, where there is a copious secretion of acrid and stimulating tears, which produces irritation and inflammation of the palpebræ. It causes heat, irritation, and itching of those parts, which leads the children to rub and scratch them. This inflammation extends from the palpebræ to the cheeks and the face. The pustules that I have mentioned form on the integuments,



which become inflamed; and thus crusta lactea, or porrigo larvalis, follows as a consequence of strumous inflammation of the conjunctiva. Now in instances where the cause that originally produced this complaint continues to operate, and where treatment has been neglected, you find that nearly the whole surface of the face becomes covered with a yellow crust or scab; and hence the name larvalis:—larva means a mask, and the term is given from the circumstance of the face being covered over with a layer of scab, that may be compared to a mask.

When you see the complaint in a full state of development it has a very formidable appearance, but it is not a dangerous complaint in reality, and it is tolerably easily removed. I should mention that this is not contagious; it is not, like tinea capitis, capable of being communicated from one individual to another; it has no contagious property.

In the inflammatory stage you must, in the first place, if the alimentary canal is loaded, clear it out by active aperients, and then administer such mild opening medicines as will keep the stomach and bowels in a proper state; and you must regulate the diet of the individual. You must employ at this period soothing local applications, and perhaps, if there is considerable heat and redness, you may find saturnine or spirituous lotions useful, or at all events you may bathe the part with emollient fluids, milk and water, or other things of that kind; or you apply mild unctuous applications, as spermaceti cerate, elder flower ointment, &c. When the inflammation is put a stop to, then you can speedily cure the complaint by applications of an astringent kind: I think there is one application of this sort which is equivalent to all the rest—that is, oxyde of zinc, *flores zinci*. This is used, in the form of a lotion, in the proportion of one drachm to one ounce of rose water, and will answer the purpose extremely well. The zinc is not dissolved in the water, and therefore it requires to be shaken up before it is applied. You dab then the part over with it, and you thus find that the pustules are speedily dried up, and the complaint removed. This substance is sometimes used in the form of an ointment, but it is not so advantageous as the lotion. The citrine ointment, *unguentum hydrargyri nitratis*, in a diluted form, that is, one part of such ointment to four, five, or six parts of spermaceti ointment or lard, may be applied for the same purpose.

Some have entertained great apprehensions that ill consequences may arise from speedily removing or drying up an eruption of this nature. They have stated that hydrocephalus, or some other internal disease, may be produced by it. The same kind of apprehensions have existed respecting the speedy cure or removal of other forms of cutaneous

disease. Now these apprehensions are not altogether without some grounds. I should say that it would be a very imprudent course of proceeding, suddenly to stop, even if we had the power to do it, the crusta lactea when it is in the active inflammatory stage, without adopting measures to prevent the supervention of other disease. I should say that in the state of the constitution in which an active inflammatory complaint like this has arisen, if you were suddenly to put an end to it, there would be considerable risk of having the disease in some other form occurring elsewhere, as happens in many other cutaneous complaints. But when disease of the skin is treated on the principles that I have already had occasion to point out to you; that is, when you endeavour in the first instance to remove that condition of the system at large which produces the complaint—when you employ antiphlogistic means in the inflammatory period, and remove the excitement on which the production of the complaint has depended—you may then safely take any means that are necessary for removing the local disease. When you have got the system into a healthy state by these previous measures, you need not entertain any apprehension of disease being produced when the local disease is at an end. There are, however, certain forms of cutaneous affection, particularly certain scaly diseases—lepra, for instance—where it exists for a certain length of time without being entirely removed, being more active at one period of the year than another—where, probably, the individuals in whom such local disease exists derive advantage to their general health from such an affection; and therefore I think in many such cases, even if we had the power of removing the local complaint, it would not be at all wise to use it when the disease remains in a state not very troublesome to the patient. Recovery from that state might lead to more serious internal mischief. I think the notion on which these apprehensions are grounded, although not right when carried to an extreme length, is founded in truth and observation, and ought not to be lost sight of.

#### *Elephantiasis.*

I have next to speak to you of *tubercular diseases* of the skin; not viewing these exactly in the light of inflammatory affections, but rather as changes of structure, with chronic thickening and development of tubercles.

All affections in which there is organic change of a part are more serious than those which consist simply of inflammation. In inflammation there is a serious disturbance, but it is of a temporary kind. We know that the disturbance will go through a certain stage, a certain number of changes, and come to an end; but when you have actual alteration of structure, you find that you

have but little power of controlling it. Such is the case with those affections of the skin which constitute the order of tubercles of cutaneous nosologists, and of which I shall have occasion to describe to you several different forms.

The first of these is *elephantiasis*, a disease which does not belong to this climate, but which we have occasion to see in individuals who have been in those climates where the disease is not unfrequent, and who have actually brought it into this country from such situations; for it is a chronic complaint, and will last a great number of years. Elephantiasis occurs in hot countries, and the patients in whom we see it are those who have brought the disposition to it from the East or the West Indies.

In the first instance, it is an inflammatory complaint; there is a considerable febrile excitement of the system; there is an inflamed state of some part of the skin, though this is not marked by the ordinary characters of inflammation in a high degree. On the portion of the skin thus inflamed, tubercular enlargements arise, varying in size from that of a large pin's head to that of a horse-bean. Soon after these are produced, they lose the light red which they had at the commencement, and they are not deeper in colour than the natural skin. They form hard smooth knots, shining somewhat on the surface. After existing for a certain length of time they ulcerate—they form an unhealthy kind of ulcer, from which a scanty discharge takes place; it forms in thin encrustments upon the surface of the sore, and a kind of indolent ulceration is produced, which remains for a long time nearly in the same state, and then slowly cicatrizes. Fresh tubercles arise, which go through the same process—tubercular elevation, induration, ulceration, and cicatrization. Thus you will see, in a part of the body that is affected with elephantiasis, some of the tubercles in their original state as mere small, pale, shining elevations of the skin; others in the condition of ulceration, intermixed with cicatrices. This affection first shows itself in the face; it affects the forehead, eyebrows, eyelids, the nose—particularly the *alæ*, the lips, the cheeks, the ears; and then it attacks, first the upper, and then the lower, extremities of the body, shewing itself upon the fingers, the skin of which becomes beset with these tubercles, so that the form of the hand is much altered, being thickened and enlarged. The tubercles spread from the back of the hand to the wrist, and at length to the fore arm. On the lower extremities, the tubercles first appear on the toes, and next occupy the feet; they do not spread much up the legs, nor do they reach, perhaps, the upper arm. Great deformity is produced by the complaint in the face; the *alæ nasi* are enlarged, fissured, and quite altered in form. The lips become thick and very broad and

irregular in shape, and in fact, such alterations take place in the whole of the features that you would not recognize the individual. The affection is not confined to these parts; it extends to the mucous membrane lining the mouth, and the tongue becomes tubercular and ulcerated. There are tubercles on the roof of the mouth and soft palate. The entrance of the fauces is beset with them, and in this way the disease sometimes extends along the air-passages to the mucous membrane lining the lungs. In one or two cases that I have seen, the disease has ended fatally by the affection extending along the mucous membrane to the lungs. In other instances, these affections are attended with considerable depression of the general powers, constituting that kind of state which nosologists have called *cachexia*—depraved habit of body. The pulse is small and feeble; the functions, generally, are imperfectly executed; the individual is labouring, in fact, under a state of decay of constitution, and the existence of the disease, the recurrence of attacks of inflammation, and the development of new sets of tubercles, continue to depress the powers, and thus the patient sinks under the complaint: such sinking, however, does not take place till after the complaint has lasted for a great length of time.

In the inflammatory stage of this affection, you must, of course, employ such means as are necessary to check the inflammation; but in the chronic stage, so far as I have seen the complaint in this country, I think there is but little to be done by medicine. It has been supposed that arsenic, mercury, and some other active means, may be capable of arresting the progress of the complaint; but, according to my experience, all these powerful means do more harm than good; and the only plan that I have seen attended with any beneficial effect in the chronic stage, is that of giving the patient good diet, good nourishment, keeping him quiet, and not giving him any more medicine than is just necessary regularly to open the bowels. Under such a course of treatment, I have seen persons, for a time, get tolerably well, the tubercles indeed remaining, but the ulcerations healing up, and the patient attaining what we might call a good state of health for one whose constitution is thus affected; but, I believe, in the end they generally die of the disease.

#### *Lupus.*

The next affection of a tubercular kind that I have to mention is that called *lupus*, a disease occurring in the face. This is also known by the name *noli me tangere*, which, I need hardly inform you, means *touch me not*—a kind of indication of the intractable nature of the affection.

It commences with inflammation and

swelling about the nose, or some part of the face, and elevation, with a bright red and pretty active inflammation of the skin, which then proceeds to a state of foul ulceration. Sometimes, however, we do not observe any previous tubercular affection of the skin.—We see that the integuments of the nose, for example, assume a bright, and occasionally a deep livid tint from the inflammation, and then go into a condition of unhealthy ulceration, without any tubercular character. The instances in which there is a previous formation of bright, red, shining tubercles, seem to be chiefly in scrofulous subjects, in whom the complaint altogether may be deemed rather bordering on scrofula affecting the skin. In this form it occurs in young subjects. But the form of lupus which appears to be most intractable is that which occurs in adult persons, where inflammation of the skin takes place, and foul ulceration ensues; and the process destroys the parts in which it is seated, spreading with a vivid red inflamed border. In this way we not unfrequently find that a considerable part of the alæ of the nose, or other part of the organ, becomes destroyed; and, in fact, the extension of the complaint in many cases completely destroys all the cartilaginous and bony parts of the nose. The ulceration sometimes extends so as to divide the septum of the nose, so that this part very frequently is lost, or considerable destruction of it takes place, before the alæ suffer much. In the case of the tubercular disease, it not unfrequently happens that there is an affection of the cheeks, near the nose, as well as of the nose itself: in either case the affection may extend to the upper lip. The constant flow of the discharge produced by the disease over the upper lip, seems to give rise to this propagation of the disease in that direction. I should mention to you that this disease is sometimes spoken of under the name *herpes exedens nasi*. Now the term herpes is usually applied to a vesicular disease produced by inflammation, running a certain course, and then coming to an end: it is an affection, therefore, totally different from this corroding ulcer—this lupus, occurring about the nose. Of course you will conclude that this disease commonly takes place in individuals in whom there is some very unhealthy state, either of the system or of the constitution generally. I have mentioned that in young subjects it takes place in those of a scrofulous disposition, and that the form of lupus that takes place in adults is generally traceable to something in the habits of the individual—to intemperance of diet, or to some of those habits that produce plethora. You do not find it taking place in healthy persons, who live temperately and properly.

Your first object in the treatment of this case must be to remove those causes that

give rise to the affection. You sometimes find a condition of the system that renders it necessary to take blood from the arm, to employ active purgatives, to regulate the diet of the patient, and prevent the introduction into the stomach of stimulating articles, whether fluid or solid. In this period of the complaint, while you rectify the cause or remove it, you must adopt mild and soothing local measures—the application of soft poultices, tepid ablutions, and mild unctuous applications. These are the means that should be applied locally; but when you have accomplished all you can by these means, then you must apply other and more active local measures, to put a stop to the foul and unhealthy kind of ulceration, from which the discharge keeps constantly exuding. The nitrate of silver in solution is a very useful application of this kind. It may be applied by means of lint under a bread and water poultice. Then long experience has established the efficacy of arsenical applications in these cases; and these means have produced so much good in cases of these corroding ulcers about the face, that hence has arisen the reputation which arsenic has acquired as a remedy in cases of cancer generally, because the ulcerations on the face have been deemed cancerous, though there is really nothing cancerous in their nature. The liquor arsenicalis, of the London Pharmacopœia, is a common form of using this remedy locally. In some circumstances you must dilute this with distilled water; under others you must apply the liquor arsenicalis of its full strength, which will frequently produce a superficial slough of the part to which it is so applied. The arsenical remedy has been used of various degrees of strength, by different practitioners. Dupuytren uses it generally in cases of this kind, but in a very mild form; he employs a combination of arsenic and calomel; 199 parts of calomel, and 1 part of white arsenic, sprinkling the powder copiously upon the part, and repeating the application frequently. There is a French remedy, consisting of ten grains of white arsenic, two scruples of cinnabar, and one pinch between the finger and thumb of the ashes of old shoes—I suppose any other inert substance may be as well employed as the latter ingredient: now this is to be made into a paste with saliva, and the paste thus formed is to be spread upon the surface of the sore. It is a tolerably active remedy, and capable of producing a slough; and when arsenic is employed in that way it completely destroys, to a certain depth, the parts to which it is applied, and converts them into a tough, dry, yellow, or brownish inorganic substance, which separates and sometimes leaves a healthy surface. Rayer and Dubois use another for-



mula—that is, half a drachm of arsenic, one ounce of French vermillion, and half an ounce of dragon's blood. This also is to be employed in the form of a paste, being mixed either with saliva or mucilage. The strong form of arsenic produces decomposition of the surface to which it is applied, giving rise to a slough; while in the milder form it is little more than an active stimulus to the parts. The white arsenic may be used in the form of ointment, mixed with spermaceti cerate: one scruple of white arsenic to half an ounce of spermaceti ointment will make an active application, capable of producing a slough. There can be no doubt that this is a powerful remedy; but you will recollect that arsenic, when applied either to a recent wound or to an ulcer, is capable of producing the same poisonous effects on the animal economy which it will produce when introduced into the stomach; therefore you must not employ active forms of the remedy to any considerable extent of surface. If you have a large surface you must employ a mild form of the remedy, or else employ the more active form only partially. You must be very much on your guard in using this remedy. By these and similar applications, ulcers having the character of lupus are very often put a stop to; but it commonly happens that they produce considerable destruction of the part in which they are situated before this object is completely accomplished. Sometimes the ulceration destroys one side of the nose, frequently the septum, and not uncommonly the entire organ. But though intractable, the complaint is not necessarily malignant; indeed, its worst effects consist in the deformity it produces, by the destructive progress of the ulceration.

to 193.

### CASE OF THE HYDRENCEPHALOID AFFECTIO OF INFANTS.

COMMUNICATED BY  
MARSHALL HALL, M.D. F.R.S.L. &c.

THE following case, for which I am indebted to H. E. Church, Esq. is peculiar, and highly deserving of being recorded, on account of the affection having *originated* in other causes, and been *continued* from exhaustion. This event is not unfrequent in its occurrence; yet no example of it is published either in my own Essay or the subsequent one of Dr. Gooch.

“DEAR SIR,

“That form of debility and hydrecephaloid affection to which, in your

late work, you have directed the attention of the profession, has been well exhibited, I think, in the case of my own child; the following account of which may not prove to you uninteresting.

“H. E. C. aged two years and seven months, was born healthy, and continued so for five months, when, without any evident cause, great cerebral disturbance and violent convulsions ensued, which symptoms were restrained by active bleeding, the free exhibition of calomel, and the frequent use of the warm bath.

“On a recurrence of the symptoms, which repeatedly happened during a period of nine months, a similar practice was pursued, with the addition of freely lancing the gums.

“Some time afterwards a very severe attack of inflammation of the brain, accompanied with the same alarming symptoms, was again effectually subdued by the same mode of treatment.

“The little sufferer, after a short interval, again became subject to muscular twitchings, dilated pupils, and throbbing of the fontanels, which had continued remarkably open. The brain or its membranes were supposed once more to be inflamed. In this last accession, however, the skin was free from heat, the tongue moist and clean, and the pulse small and thready. Under these circumstances, ammonia was instantly administered, and afterwards, from time to time, wine, in combination with sulphate of quinine. The alarming symptoms quickly subsided, and a gradual and perfect recovery was effected.

“Should you deem the foregoing remarks worthy of your notice, you may make what use of them you think proper. I regret that a more circumstantial detail of symptoms cannot be given, as I failed to make any notes of the case at the time.—I remain,

“Your obedient servant,

“H. E. CHURCH,

“Memb. of the Coll. of Surgeons.

“To Dr. Marshall Hall.”

This is not the only example of morbid affections arising from one cause being protracted by another and very different one. Pain, and other affections of the head, the effect of intestinal irritation, is frequently, first relieved, but then aggravated, by giving purgatives, or otherwise inducing irrita-

tion of a different kind, or exhaustion. The interesting observations of Mr. Brodie (*Medico-Chirurgical Transactions*, Vol. xiv. p. 381) exemplify this remark. The subject is treated of at length in my *Researches on Blood-letting*.

April 22, 1830.

## SPASMODIC AFFECTION OF THE UTERUS.

*To the Editor of the London Medical Gazette.*

Eton, April 1830.

WRITERS on midwifery tell us, Mr. Editor (and among the rest my excellent preceptor, Dr. D. D. Davis) of a spasmodic affection of the uterus which they denominate "the hour-glass contraction," an affection which I imagined I had several times met with, and overcome by a large dose of laudanum and manual efforts, gradually relaxing the spasm. It happened, however, at a late meeting of the "Windsor and Eton Medical Society" that Sir John Chapman, of Windsor, a gentleman of great experience, and very extensive practice, when speaking on this subject, gave it as his decided opinion that no such affection as hour-glass contraction of the uterus existed—an opinion which, I confess, staggered me at the time, as strongly militating against my own experience as well as all our best authorities on the subject. The following case, however, which lately occurred to me, has so strongly convinced me of the truth of that opinion, that I am desirous of detailing it, for the judgment of the profession.

### *Case of Retention of the Placenta from long continued Spasmodic action of the Uterus, induced by sudden traction of the Funis.*

A woman, 35 years of age, of healthy appearance, and at the full period of gestation of her first child, was seized with uterine pains on Wednesday morning, 7th April, which continued during the day at irregular intervals. In the evening, there being no dilatation of the os uteri, and that organ being high up in

the abdomen, an opiate was given, which produced a quiet night, and the following morning an aperient, which did not act till late in the day. Thursday was passed as the previous day, with small irregular pains, and no advancement of the labour. On that night, however, or rather at two o'clock on Friday morning, the patient, on getting out of bed to the night-table, was seized with two pains, which expelled the child with such force that the funis was separated from the placenta, close to its origin. I was sent for on the instant, and found the patient without either pain or hæmorrhage; the uterus firmly contracted, and feeling like an immense stone in the abdomen. After remaining a couple of hours, and finding no expulsive efforts made by the uterus, I passed my hand into it, as I imagined, (my arm being introduced up the vagina to within three inches of the elbow), for the purpose of removing its contents, when I found a firm constriction in its centre, and a portion of the placenta hanging loosely below it. I gave all the laudanum I had by me at once (about 5j.) and endeavoured for some time to dilate the spasm, but failed. I then left the patient, with directions to be sent for in case of hæmorrhage, and prescribed an anodyne medicine, to be repeated at intervals. She remained without hæmorrhage or an expulsive pain during the day, the uterus firmly contracted in the abdomen. At six o'clock P.M. I renewed my efforts to extract the placenta, but found the uterus in precisely the same state, and was compelled to desist. At eleven at night I gave the patient thirty drops of Battley's liq. opii. sedativ.; and at 12 o'clock I again introduced my hand, and found the spasm as rigid as before. I then pressed my left hand on the abdomen, and found, to my surprise, from the shape and situation of the uterus, that my fingers had never been within it at all, but that its mouth was firmly closed on the placenta, and that the uterus had receded so high into the abdomen, thereby elongating the vagina to so great an extent as led me to suppose I had found my way into the middle of the organ, when, in truth, I had but arrived at the portal. I now directed the nurse to press very firmly on the fundus uteri, in opposition to my efforts to dilate its mouth, and by half after twelve o'clock I succeeded, by very strong exertions, in re-

laxing the spasm so as to admit my hand, and immediately withdrew the placenta, the uterus instantly returning to its former state of rigidity. Three parts of the placenta had been retained within the uterus; there was no appearance of adhesion to its surface, no hæmorrhage succeeded, and the patient did well.

With best wishes for the success of your valuable publication, believe me,  
Mr. Editor,

Very truly yours,  
WILLIAM MOSS.

## COLLEGE OF PHYSICIANS.

*To the Editor of the London Medical Gazette.*

SIR,

I TAKE advantage of your widely-diffused and justly-patronized Gazette to call the attention of those who are labouring under the same privation as myself, to consider the best means of obtaining redress.

I am a Licentiate of the College of Physicians of London, and among the numerous fees exacted on admission, I find one of 32*l.* "to the College." I should be glad to be informed if this sum, or any part of it, goes towards the support of the library; and if so, why I am not allowed the perusal of the books contained in it? This I consider the greatest privilege that could be granted, and a privilege that every Licentiate is bound to contend for. I have visited most of the principal cities in Europe, but I blush when I declare that in none have I found such impediments thrown in the way of medical instruction as in this.

If any one through the medium of your Gazette will suggest the means best adapted to obtain this privilege, I am convinced he will meet with support from every enlightened member of the medical profession.—I am, sir,

Your very obedient servant,

A SUBSCRIBER.

8th April, 1830.

[We believe there is no library fund, and, in fact, that the College possesses very few modern works; so that the privilege would not be so valuable as

our correspondent seems to suppose. We know of no mode of obtaining it as a right; but as an act of courtesy any Licentiate may easily procure admission through the medium of the censors or curators of the museum. We would, however, suggest to the College, that it might be advantageous to all parties if they would institute a fund for the support and increase of the library. Suppose Fellows and Licentiates were to pay from three to five guineas per annum, all having equal right to the use of the books. This might be done on the same principle as at the Royal Institution, where the subscribers have the privilege of attending the lectures and visiting the library—without, however, their being considered members of the Institution.]

## ANALYSES & NOTICES OF BOOKS.

"L'Auteur se tue à allonger ce que le lecteur se tue à abrégér."—D'ALEMBERT.

*Observations on the Structure and Diseases of the Testis.* By SIR ASTLEY COOPER, Bart. F.R.S. Serjeant-Surgeon to the King; Consulting Surgeon to Guy's Hospital, &c.

OF those young authors who write on practical subjects before they have acquired experience, one speaks according to circumstances. It sometimes appears that they are meritorious, industrious young men, who resolve, in a manly and open manner, fairly to enter the lists and compete with all comers, but without affectation or undue pretension; and such aspirants after fame we are naturally disposed to treat with courtesy. Sometimes, again, we see one just from the schools putting on the grave character of wisdom and experience, and speaking of what he has seen and what he has done; and towards such it is impossible to feel indulgent. On the whole, how differently are the best of such competitors for notice to be estimated from those who, in the maturity of life, and with a grateful sense of public favour, sit down to give the profession the benefit of their experience. Sir Astley Cooper has no character to win, but, on the contrary, much to risk. He cannot be sus-



pected of mercenary motives, for every one must acknowledge that he may, if he choose, be more lucratively employed than in writing books. We, therefore, commence our review of his new work with the conviction that we owe it to a pure source—a sense of duty, and the hope of alleviating human suffering. It is, indeed, but the continuance of that active life in aid of his younger brethren, formerly displayed as a teacher, and now exhibited to us in the mode best becoming our author's matured experience and rank in his profession.

What first catches the eye in this publication is the plates; and we frankly confess, that in them we are disappointed. The great work of this author on *Hernia*, is creditable to the age and to the country; the dissections were accurately made, the drawings and engravings beautiful, and they will remain a testimony of his liberality, when these coloured lithographic drawings shall be forgotten. Lithography is a curious and a beautiful art; but we would recommend to Sir Astley Cooper, in his future works (for we are covetous of more), to take the advantage which fortune has given him, and to employ the burine, rather than the stripling pencil of lithography.

The present volume is a large quarto of 245 pages, divided into two parts, illustrated with 24 coloured plates. The first part contains the *Natural Anatomy of the Testis*, and the second part, its *Pathology and Morbid Anatomy*. We shall first notice the author's anatomical demonstration of the testis, which we find to be the same that he was accustomed to give in his lectures;—and here we take the opportunity of recommending to young lecturers the minuteness and accuracy displayed in the anatomical details of this veteran in teaching. It may be well for those who have fallen into a slovenly and superficial method of demonstrating—omitting the details, and attending to what they call “*surgical anatomy*” alone—to observe that the men who have been so distinguished as practical surgeons, acquired the confidence of their pupils, and ultimately of the public, by such labours as these. It may justly be said that the schools of anatomy and surgery in London acquired their present high character by the same strict and explicit way of demonstrating all

parts of anatomy which we have exhibited to us here; and that this character can only be maintained by constant attention to the foundation on which it was raised.

We find in this division of the work, an account of a new method of injecting the seminiferous tubes of the testicle, adopted by our author; and the success attending it has been highly satisfactory. It is known to every anatomist how difficult it is to obtain an injection of these tubes by the common method of pouring mercury into the *vas deferens*. The history of this department of anatomy acquaints us with the unsuccessful attempts of Haller, who could not get the fluid to pass further than the *rete testis*, and of the elder *Monro*, who was even less successful; and how it was reserved for the *Hunters* first to shew these *tubuli seminiferi* injected with mercury. And here we cannot but recal the violent disputes between *Dr. Wm. Hunter* and the second *Monro*, founded on this very point, which proved, at all events, the zeal with which these eminent men cultivated minute anatomy. We have ourselves experienced frequent disappointments when attempting to inject these vessels, and yet we have been successful; but it has been, we must confess, through good fortune, rather than any good management. The preparations of successful injections of the *tubuli seminiferi* in this country, might, we undertake to say, be very easily enumerated. But even after obtaining a good injection with quicksilver, the dissection and examination of the structure of the gland can only be prosecuted at the hazard of wounding the vessels, and letting the quicksilver escape. Hence these preparations, however splendid they may be, (when the whole body of the gland appears one mass of silver, immersed in clear turpentine, and spread out upon red paper,) are almost useless for the minute examination of the testicle. *Sir Astley Cooper* fills these tubes with a coloured solution of glue; and it is obvious how this does away with the objections which we have mentioned. He throws this coloured glue into the tubes which form the *rete testis*, using a fine pipe of silver, or of steel; and not only are the *tubuli seminiferi* injected, but the *vasa efferentia* are also filled. The drawings of the preparations made

by him in this manner, sufficiently shew the advantages resulting from it in enabling us to unravel the minute texture of the gland.

We regret that, in the account of the coats of the testicle, Sir Astley has countenanced a method of describing the tunica vaginalis which must render the study of our best writers difficult. We may ask, why should the nomenclature of our author be different from that of Haller, Hunter, Pott, Warner, Sharpe, Earle, Ramsden, &c.? These are authors whose works the diligent student must read, and of course he must understand their terms. They all agree in calling the outer loose covering of the testicle, *tunica vaginalis*; and the internal, smooth, white covering, which adheres to the body of the testicle, *tunica albuginea*. It was between the tunica vaginalis and the tunica albuginea that they said the cavity was formed into which the fluid of hydrocele was secreted—into which the intestine fell in congenital hernia, &c. Sir Astley Cooper, on the other hand, terms the first coat (*i. e.* the tunica vaginalis) *tunica vaginalis reflexa*; and the second coat (*i. e.* the tunica albuginea), *tunica vaginalis testis*; while he applies the term *tunica albuginea* to what may be considered a newly described coat—one which lies under the last, and embraces closely the glandular texture of the testis.

Let us consider the origin of the old names. The terms of human anatomy, it is known, are frequently to be traced to resemblances found only in brutes. Thus in dissecting the testis of a dog, or a calf, or a sheep, the anatomist lays open a regular sheath, or vagina; not a mere sac enclosing the body of the testicle, as in the human subject, but a scabbard, sheath, or vagina, extending from the lowest point of the epididymis to the abdominal ring, where its opening is. Nothing can be more appropriate than the term vagina, applied to this loose outer coat; accordingly it has been received by all authors; and when they saw lying within this sheath the testicle itself, invested closely by a membrane, which was of uncommon whiteness, they naturally called it tunica albuginea.

The discovery of the descent of the testicle led to new ideas about these membranes. When it was observed that the testicle lay originally in the ab-

domen, it was found that the membrane closely attached to the body of the testicle was precisely in the same circumstances with the investing peritoneal covering of any of the abdominal viscera. At all events, this membrane was clearly the first coat which the testicle had from the peritoneum; and the vaginal coat was the second, which it received only after its descent. To say, therefore, that the tunica albuginea of our best authors is a *tunica vaginalis*, is just that sort of inaccuracy which is apt to puzzle the student; since, in matter of fact, it is not a sheath or vagina, nor any thing like it.

If, in dissecting the testicle, we opened a membrane like a sheath, and called it vaginalis, and were to trace that over the face of the testicle, there would be some reason for calling this part of the membrane *tunica vaginalis reflexa*; but by this new nomenclature we apply the term vaginalis to this inner coat without any reason, and call the outer one "*reflexa*," in consequence of the peculiarity to which the term vaginalis is applicable—if applicable at all. We must acknowledge, however, the propriety of distinguishing both the peritoneal or serous coverings from that membrane intimately connected with the proper substance of the testicle, and called by our author tunica albuginea; which term, we repeat, is only objectionable as used by Sir Astley, because it is not what is meant by the same term as it is used by our best authors.

At the end of the first part, the author has related some remarkable cases, shewing the effects of removing these organs in the living body. After stating the first case, he continues:—"From this man's declaration I believe that the history of eunuchs, if perfectly castrated, has been very much misrepresented; for it would seem, that after a few months, he lost all seminal emission, but that the erectile power remained for a few months more; and then, excepting at very distant periods, and but imperfectly, even that power ceased, and the penis became shrivelled and diminished."

"The second case in which I removed the testis, was in a lad, in Guy's Hospital, aged sixteen years, who had previously the other testis extirpated. The disease each time was a scrofulous abscess, with subsequent ulceration,

The lad had not reached puberty, and he was very weakly and emaciated. Five years afterwards, as I was stepping out of my carriage, at a patient's door, a fat, sleek-looking, young person said, 'How do you do, sir?' I said, 'Very well; but I do not know you.'—'Have you forgotten removing my testicle, in Guy's Hospital, five years ago?' 'O yes, I recollect you; you look very well.'—'Yes, but I am very unhappy;' and he immediately burst into tears. 'Why, what do you lament?'—'Oh, sir, that I am not as other men. I often wish that I were dead.' Desirous to cheer him, I said, 'You are a lucky fellow, for you are saved from many evils.' He shook his head, and I left him sorrowful."

We naturally think of referring here to the parallel facts with relation to the other sex, as stated by Mr. Pott. We must remark, however, that the curious results from Mr. Pott's operation have carried the profession away from the consideration of the propriety of his practice; a practice which, we think, was altogether unwarrantable. The ovaria presented at both groins in a woman in the situation of inguinal hernia, and he extirpated them! The effect of this extirpation was, to change the female character of the individual, and to produce a resemblance to the male. The best view of this subject is, perhaps, that given by Mr. Hunter, which is essentially this, that both the male and female organs are superadded parts; that they are not necessary to the economy; and that, but for their addition, the human frame would have a form and character differing from either sex. Thus, in a child before puberty, we often mistake the sex; the lively girl having something of the boldness of the boy, or a modest boy the soft look of the girl. The development of the male organs produces an entire change on the frame; strength of character and firmness of bodily figure result: whilst under a corresponding change of organization, the bold little Miss acquires the more modest feminine graces, and becomes ashamed of that boisterous activity which belonged to her in childhood. It would appear as if there were an intermediate state; and that it required the superimposing of either one or other of these organs to develop all the marks or features by which the sexes are distinguished. The jockey

attends to this who is desirous of having a horse high in the fore quarters, partaking, that is, of some of the characters of the entire horse; for he defers the operation of gelding until the animal has had time to acquire that peculiar form of the skeleton which the presence of the testicles bestows. It is not many years ago since Mr. White, of the Westminster Hospital, drew up an account of a boy, the "Infant Hercules," in whom the external organs of generation, to appearance in full maturity, were appended to a child, producing a singular combination of the resolute and pugnacious character of a lad with the intellect of a child. Soon after this, there appeared another infant, a still more disagreeable monstrosity, having a development of the exterior parts of the woman, with the other general characters of the adult also formed. In the decline of life, when the same organs lose their natural functions, some will assert, that we have another opportunity of observing the influence which they possess over the general frame. It has been remarked, that the two sexes have then a tendency to relapse, as it were, into the common or intermediate form. This was observed by Mr. Hunter in birds; the hens of different kinds, as of the pheasant or peacock, when they grew old and ceased breeding, assumed the plumage of the cock, and even the spurs. These circumstances sometimes may apply in consultation, inasmuch as there may be a weakness of mind or a deficiency of character in an individual; and on more particular inquiry, this will be found to be attended with, and perhaps produced by, an entire want of sexual appetite.

In another number we shall proceed to the more interesting part of the volume, which treats of the pathology and morbid anatomy of the testis.

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#### CASE OF INTUS-SUSCEPTION,

*With Sloughing of a large portion of Intestine,  
voided by Stool.*

By LEVI GAYLORD, M.D. of Sodus,  
New York.

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In the month of October, 1827, I was called to the house of the Rev. William



Stone, of this town, to attend on his grandson, William Henry, then about six years of age. His first symptoms did not indicate a very severe attack. A cathartic was administered, which operated readily, and with apparent efficacy. On the following day he began to complain of pain in the bowels, attended with considerable fever, which continued with increasing severity for two or three days, until nausea, stercoraceous vomiting, and the usual symptoms of the most obstinate constipation, or intus-susception, were distinctly prominent.

Bleeding, blistering, cathartics, often repeated, beginning with the mildest, castor oil, Epsom salt, followed by jalap, calomel, croton oil, &c. with enemata frequently administered, (two or three occasionally of tobacco,) and Dr. Hosack's emetic process, with the warm bath, were severally and unitedly resorted to, and persevered in, under my personal direction and inspection, for about four days.

The acuteness of the pain, the intensity of the heat, together with the accelerated pulse, reddened, shrivelled, dark-furred tongue, and great prostration of strength, indicating a tendency to putrescency, left us scarce a shadow of hope that the termination of the case could be favourable.

In about four or five days, an evacuation was procured, of a dark briny appearance, somewhat of an indigo tinge, followed by a speedy mitigation, and soon by an entire alleviation of all the alarming symptoms.

This discharge was succeeded by one or two rather copious discharges, exhibiting nearly the same appearances. The evacuations soon became natural, the bowels open and regular, the febrile symptoms disappeared, the tongue cleared, the appetite returned; in short, the whole system appeared with unwonted rapidity to resume its ordinary functions, and place him in a most favourable and convalescent state.

In a little more than two days from the opening of the bowels, I believed and declared my patient out of danger, and left him without any appointment to see him again, but the next morning was summoned to attend him, as his symptoms were materially worse, and "an astonishing appearance presented itself, from the bowels having come down."

I immediately repaired to the house, and found a portion of the intestines protruding in two doublings or folds of several inches in length. Most of the intestine thrust out was in a state of incipient mortification; some more advanced in the putrifying process; and other portions exhibiting a nearly natural appearance. In this state I should not have thought that any person who had ever seen or handled an intestine, would have doubted whether this was such. I immediately gave up the patient for lost, and notified the family of what I considered the inevitable result. I, however, applied a poultice of charcoal and yeast to the part, directed a saturated decoction of cinchona, and also brandy, to be administered as the stomach would bear, and nourishing broth to support him while he lived.

In about twenty-four hours, the protruded portion of the bowels sloughed off: it measured twenty-three inches in length, exclusive of about three inches contained in a fold, which adhered too firmly to be detached or extended, and which I supposed has formed the origin and laid the foundation of the difficulty and obstinacy developed in the progress of the disease. \* \* \*

After the separation of the detached portion of the bowels, passages were procured, though with considerable pain and difficulty. The evacuations put on much the appearance of the fermenting wash in a distillery. Digestion was very imperfect; emaciation to an extent but rarely witnessed ensued; and the assimilating powers of nutrition were so feebly maintained, that the lamp of life gleamed feebly in its socket, and was momentarily threatened with entire extinction.

In this state he continued with little alteration for several weeks, when a novel and interesting feature of the complaint was gradually developed, until it became the prominent characteristic of the case.

The pain, which had been pretty constant, gradually became periodical, until it assumed all the regularity of parturient pains, in its returns, varying from five to fifteen minutes between each successive paroxysm. The voice also was precisely of that kind which distinguishes such pains, uttering those cries which indicate the most piercing distress, and which might be heard to a considerable distance from the house.

Each paroxysm lasted about a minute and a half, and was succeeded by an interval of perfect ease. On the return of each pain, the abdomen, which before was jejune and contracted, suddenly grew distended and inflated, discovering through its thin parietes, every movement and tortuous winding of the intestinal tube, each portion of which seemed endeavouring to force its way through the thin integuments which enclosed it, and exhibited a tympanitic hardness and tenseness seldom witnessed in the most obstinate diseases of that kind, but which instantly and entirely subsided in exact ratio to the pain.

This distressing symptom was treated during some weeks with antispasmodics, anodynes, blistering, fomentations, and gentle cathartics, with every means which I supposed might enter into a palliative or curative course of treatment. At length I resolved on a mercurial course, notwithstanding the extremely low state of the patient, and to my great satisfaction this troublesome and distressing symptom subsided, as soon as I had carried it to the point of gentle and moderate salivation.

Health was gradually restored, and at this date, (about two years since the period of the attack,) my former patient is a tolerably healthy lad, subject, however, more than ordinarily, to attacks of colic and other bowel complaints\*.

Sodus, N. Y. Sept. 29, 1829.

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## ANATOMICAL MODELS.

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*To the Editor of the London Medical Gazette.*

SIR,

I AM induced to offer a few remarks upon the subject of anatomical models, imitative of natural or diseased structures, elicited by the notices which have recently appeared in the *Medical Gazette*†, not merely for the purpose of rectifying the misconceptions to which those notices might give rise, but also to direct the attention of the students and junior members of the profession to the cultivation of an art hitherto supposed to be so difficult and mysterious

as to have been excluded from consideration as an useful and improving auxiliary in a liberal course of surgical education. To those who are aware of the impracticability of preserving the forms, colours, and appearances of anatomical specimens of various parts of the body, either in wet or dry preparations, the value of an art which enables its possessor to imitate and to fix natural or morbid appearances, with all the vividness under which they at first presented themselves, must be sufficiently obvious; and by selecting useful subjects, either of pathological or of surgical anatomy, the means of valuable and practical reference may always be at hand; for if the imitations be accurate and faithful, every visual impression which the original could make may be preserved for any length of time. Although the intrinsic value of such productions, when completed, is very considerable, I believe it is yet much less than that which the surgical student, anxious to qualify himself for the duties of actual practice, derives from the more severe study of relative and surgical anatomy, the knowledge of which forms the very groundwork of any approach to excellence in this art as relating to the useful and practical purposes of surgery. In this art, as well as in every other art or science, there are difficulties to be surmounted, yet it may be acquired by whomsoever is willing to pay the price of accurate observation, and of persevering labour and study. If the difficulties likely to occur to every novice, and the niceties of attention absolutely required to render any such imitation faithful, be demonstratively explained, the labour may be much abridged, and many fruitless, and therefore discouraging attempts, be obviated. The hidden treasure sought will not be found in the shape of gold, but in the increased power attained by the surgical student, through the severe exercises which such productions entail upon him.

The remarks in your number of March 6th, (p. 736), under the head of "Wax Models," if allowed to pass unnoticed, would lead to a very erroneous impression that Mr. Towne was the only Englishman who had the merit of introducing, or of creating wax modelling in this country in the representation of anatomical or morbid specimens. So far from calling in question Mr. Towne's attainments and success in his,

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\* Amer. Journ. Med. Sciences, Feb. 1830.

† Pages 666 and 736, vol. v.

art, I believe him to be deserving of high commendation; but the zeal of your correspondent, who states, on the authority of Dr. Hodgkin, that "he created his own art," (if by his own art he meant that of imitative modelling in wax, or other materials, so as to represent the various structures of the human body), requires to be received *cum grano salis*.

Whoever had observed, even so far back as twenty years, or more, the beautiful specimens of imitative modelling in wax, or other combined materials, in the museum of Mr. Charles Bell, when that museum was in London, the work of one who unites, in an eminent degree, the talents of the anatomist and surgeon with those of the artist, must be aware that in truth to nature, and in richness of effect, these specimens were not only equal to, but even superior to those of the Foreign schools. Had Mr. Bell been as willing as he was able to divulge the means by which such splendid effects were produced, I doubt not that long ere now the practical value of such exercises would have been so fully appreciated that every surgical student, ambitious of more than common-place attainments, might have so far cultivated this useful and elegant art, as to be enabled to make permanent fac-similes of his own most important dissections in surgical and pathological anatomy, the practical uses of which to the surgeon are of far higher value than the mere pleasure which such productions of art are capable of affording to the eye\*.

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\* All the information which one of Mr. Bell's pupils, who was anxious to learn, or even to glean a hint relating to this art, which might enable him to imitate his teacher, to whom he looked up with admiration, could obtain was, "that it was done after the manner of the encaustic painting of the ancients." It is not, however, to be expected that Mr. Bell, or any other teacher of medicine or surgery, should, without an adequate consideration, give up his time and the fruit of his experience, to enter into the details of an art (although that art may be a valuable auxiliary to medical or surgical knowledge) which he may have cultivated, but does not profess to teach. Many persons who have freely promulgated their discoveries in science (and few have contributed to medical science more extensively, or with greater honour to themselves, than Mr. Bell has done), have yet been reluctant to communicate, in collateral or minor matters, that information which it had cost them great sacrifices of time and experiment to arrive at; but which, when the difficulties had been thus surmounted, might be communicated to others, perhaps in one-tenth part of the time originally sacrificed—to others whose habits and previous attainments would never have enabled them to surmount the difficulties by their own unaided powers.

For some successive years, the society for the encouragement of arts, &c. in London, had offered their highest premium—their gold medal, for the production of coloured anatomical models in wax, or other substance, without a single claimant. By a reference to the records of the society, you may ascertain that the first candidate who was rewarded for anatomical wax-modelling, was Mr. John Rutherford Alcock, a surgical student, who in 1825 received the gold Isis medal; and in 1826, the highest honorary reward which the society bestows, the large gold medal. Now the conditions attached to these rewards, required that the candidate should execute openly, in presence of the committee of polite arts, which committee was open to every member of the society, specimens in verification of those rewarded, thereby disclosing the manner in which the entire process was conducted; so that difficulties, which it had cost great sacrifices, both of time and of expense to overcome, were removed in relation to those who might choose to profit by the knowledge which he had thus freely communicated\*.

The same records will shew that Mr. Towne did not present any coloured anatomical models in wax, in claim of the premium offered for that purpose, until the year after Mr. J. R. Alcock had received the large gold medal, although Mr. Towne was in 1826 rewarded with the large silver medal of the society for

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\* Extract from the Address delivered at the public distribution of the rewards of the Society of Arts, May 29th, 1826. Read by the Secretary, Arthur Aikin, Esq.:—

"Surgical Students.—It is now three years ago since the Society first began to offer premiums in the class of polite arts expressly for surgical pupils.

"They were induced to do this in consequence of its being represented to them that many cases of diseased parts, or of malconformation occur, which it would be highly interesting to preserve a record of, but which are lost to the profession because the practitioner in attendance is incapable of making a drawing of appearances which no words can intelligibly describe. It was also considered desirable to endeavour to introduce into this country the art of modelling in coloured wax the parts of the human body in their natural, morbid, or dissected state—the many advantages of which will be manifest to all conversant with such studies. The appeal of the Society to the junior members of the profession has not been made in vain—Mr. J. R. Alcock has sent in a model in coloured wax of a dissected arm, so accurately and beautifully executed, as well entitles him to the gold medal; and large silver medals have been respectively given to Mr. Attenburrow, for his coloured drawing of a dissected arm; and to Mr. Jos. Towne, for a very beautiful small model of a skeleton."



a plaister model of a skeleton, which was considered a meritorious production, and indicative of great ingenuity. It is but justice to add, that in 1827 Mr. Towne received the large gold medal for coloured anatomical models.

I cannot conclude this explanation without expressing my firm persuasion that the profession and the public are both greatly indebted to the society of arts for the encouragement they liberally afford in annually offering premiums to medical and surgical students for models and drawings *made from actual dissection*; to effect which, requires a much more severe study of the parts represented than is usually bestowed when there is no such test, whether the impressions received be vague or comprehensive\*. Such exercises, to the surgical student especially, are of important use, as tending to render precise, and to fix impressions otherwise too apt to be indefinite and fugitive; whilst the judicious arrangement of limiting the rewards to those to whom the requisite preliminary study must necessarily prove highly beneficial, is a gratifying instance of the interest which the public takes in the education and useful attainments of the future members of the medical and surgical profession.

I am, Sir, yours, &c.

THOMAS ALCOCK.

11, New Burlington Street,  
April 24, 1830.

## COLLEGE OF PHYSICIANS,

Monday, April 19th.

DR. MATON took the chair this evening, in the absence of the President, who, we presume, was at Windsor in attendance on his Majesty. The meeting was numerously attended, and among the visi-

### \* "PREMIUMS FOR MEDICAL OR SURGICAL STUDENTS."

For the best coloured anatomical model of a dissected limb, or other part of the human body, in wax or other substance—the Gold Medal.

For the best original drawing (made from actual dissection) of the anatomy of the human body, or of any part thereof, sufficiently full and accurate for the purposes of surgery, such drawing to be not less than the natural size of the parts, by persons under the age of 25—the Silver Medal. For the next in merit—the Silver Isis Medal.

It is required that each model and drawing be accompanied by an outline, with the necessary references to render them intelligible."

tors was Walther, the distinguished German surgeon.

The first paper read by Dr. Hawkins was a letter from Dr. Heberden to Sir Henry Hallford, on the subject of

### *Small-Pox occurring without any apparent source of infection having existed.*

Dr. Heberden having heard that a prisoner in the Penitentiary at Millbank had been affected with small-pox, determined to inquire into the particulars of the case. The circumstances proved to be as follow:—An individual named Garrow, above 37 years of age, had been received into the Penitentiary 14 months previously, and kept, according to the rules of the establishment, without intercourse with any other persons—except the governor, chaplain, surgeon, warden, and task-master, all of whom live within the walls of the prison, though they are not prevented from going out. On the 20th of November Garrow complained of head-ache and fever, for which he was taken to the infirmary: in three days the small-pox appeared in its usual form. When seen by Dr. H. the crusts had just fallen off, and left the skin marked, but not pitted. The eruption had been of the distinct kind, but copious. There had been no case of small-pox in the Penitentiary, and none of the five persons who had access to him were ill. No friends had been admitted to visit Garrow since September, and though he had received a letter from his wife in Scotland, this was after he had begun to sicken; nor did it appear that any instance of small-pox was known to have occurred in her neighbourhood. The disease, however, prevailed in the neighbourhood of Millbank, and Dr. Heberden conjectures that it had been conveyed by the warden or task-master; at the same time, neither of these persons were conscious of having been exposed to it.

Dr. Haygarth and Dr. O'Ryan endeavoured to ascertain the distance to which infection would extend, and were led to think it under half a yard from a subject actually labouring under small-pox.

The above was followed by some *Observations on Sydenham's Theory of Small-Pox*, by Dr. Macmichael.

However familiar the fact, that small-pox and the other exanthematous diseases are infectious may now be, Dr.

Macmichael remarked, that they had long been known before this property, apparently so obvious, was acknowledged. This appeared so remarkable, that it was adduced by the author a few years ago as an argument against the supporters of the "absurd" proposal to abolish the quarantine laws; who held, that where a disease was really contagious, as small-pox, no doubt was ever entertained with regard to the mode of its propagation. Now in exposing the fallacy of this, Dr. Macmichael asserted that Sydenham, discerning as he was, in no part of his writings gave any hint that he thought the disease was communicated from one person to another. This statement, however, Dr. Macmichael thinks ought to be somewhat qualified. In Sydenham's "*Methodus Curandi Febris*," (1666) in the chapter *de Variolis*, among various other matters, the idea of infection is distinctly expressed, for he says the disease will arise "*vel ex ipsis effluviis ex aegrotantium sanguine transmissis*." Yet notwithstanding this close approximation to the truth, Sydenham immediately after lost sight of this view, and involved himself in confused and unsatisfactory refinements. The curious fact of one attack of small-pox guarding the system in general against its recurrence, led Sydenham to reject the doctrine of its being contagious, because in diseases "depending upon any malignant cause," as syphilis, for instance, the same person may be infected again and again. Another argument which he used against admitting it to be contagious, is derived from the suddenness of its attack, and the rapid formation of so large a quantity of purulent matter. In the edition of his works, published in 1685, only four years before his death, all the theoretical doctrines to be found in the earlier copies, are omitted. It was from perusing this, the latest edition which appeared during his life-time, that Dr. Macmichael was led to suppose that Sydenham had made no mention whatever of contagion; and although it appears that he had once entertained the notion, he seems soon to have rejected it as untenable. How strange it appears to us at the present day that any one should witness the spreading of small-pox without suspecting that one person caught it of another! "So often are we on the very threshold of discovery which by some fatality we miss, and

when it is at length made, have only to express our astonishment that we were so marvellously purblind as to overlook it."

### *Morbid Appearances in Glanders.*

On the table were drawings representing some interesting pathological appearances in the horse and ass, presented by Mr. Sewell, assistant professor to the Veterinary College.

The first plate represented hepatization of the lungs of an ass, produced by inoculation from the suppurating hepatized lungs of a glandered horse, that being one of the sources of the disease called glanders. The second represented miliary tubercles resulting from inoculation with the matter of a suppurating tubercle of the lungs of a glandered horse—another, and a more common cause of glanders. Both these experiments had proved fatal within a week. The third plate exhibited the appearance of coalesced tubercles and vomice in the lungs of a horse that died of glanders, being the most common change found in such cases.

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### ROYAL INSTITUTION,

Friday, April 23, 1830.

BENJAMIN BOND CABBELL, Esq. F.S.A.  
VICE-PRESIDENT, IN THE CHAIR.

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### *On the flowing of Sand under Pressure.*

M. HUBER BURNAND, who, about two years ago, described to the Philosophical Society of Geneva an anemometer, in which the force and duration of the wind were ascertained by the quantity of sand which escaped from an aperture, varying in its size with the wind, a notice of which appeared in the *Journal of Science* for last June, was led to institute a series of experiments "*On the Flowing of Sand under Pressure*," which have developed some curious phenomena, and these were discoursed on and exhibited by Mr. Faraday in a very interesting manner this evening.

We owe some of the most splendid ruins in the world, viz. the aqueducts, to the ignorance of the ancients of that law of fluids, that they will always find their level, and it little matters whether the fluid experimented on be water, mercury, or any other melted matter.

As the effect of heat on solids in reducing them to the fluid state has been supposed to consist in the separation of their particles from each other, so as to give them liberty of motion, it might have been imagined, if a like separation were effected by other means, a like phenomenon would result, and so indeed it does in some degree, for fragments of marble and of glass will slip over each other, and shot will flow to a considerable extent; but powdered ice is not water, however finely it may be pulverized, and there is something in fluidity that yet remains recondite. The flowing properties of sand and other bodies not too finely powdered, (that degree of division seems to answer best which will allow the fragments to pass through a sieve containing 38 wires to the inch in one direction, and 45·6 in the other, and the aperture must never be less than ·079 of an inch in diameter,) appear to be of an intermediate kind between those of solids in mass and perfect liquids. Water will flow out of any vessel in which it is contained with a rapidity, and rise to a height proportionate to the head of water in the vessel or the artificial pressure exerted on it; but the flow of sand is always equal in equal times, and it is affected neither by the head above it, nor by any pressure, however great, that may be exerted; neither will sand rise in the opposite leg of a syphon into which it may be poured, as true liquids do, nor will it even displace a fluid, *e.g.* mercury, which may be in the bend of the syphon, or cause it to rise in the opposite leg more than a very minute fraction, to whatever height the sand may be extended. When sand is placed on a level surface, and then raised to an inclined plane, this inclination must be at least  $30^\circ$  before it begins to move, and when it is poured upon a plane, it rises into a conical heap or hillock, having an angle of about  $30^\circ$ , rarely so much as  $35^\circ$ . Shot, peas, &c. give the like results; and it would seem on examination that the heap may be considered a series of cones of greater and greater size overlapping each other, as paper cones might be put over one another, and each supported, not upon the under one, but by its own base; so if the base of the hillock be lessened on any side, a complete layer or cone falls; and hence it would seem that when sand is put into a tube, the bottom of the tube sustains only

the weight of a heap or cone of  $30^\circ$ , and that all the rest, to whatever height the sand may be carried in the tube, is supported by the *sides*, which are in the place of the bases of each successive cone, the apices of which alone are contained within the tube. This will explain the curious fact that no pressure, however great, can increase the rapidity of the flow of sand, because it is transferred to the sides of the vessel, and does not act upon its base, and also why it does not cause the mercury to rise in the syphon, as well as many other like effects which occur in the common arts of life, *e.g.* the hopper of a corn-mill, the brick-maker's pug-mill, &c. &c. To ascertain this still more positively, some ingenious experiments were devised—such as hanging over a very delicate balance a tube with a loose bottom of cork, and its cone of sand in the scale, and then filling the tube with sand (say several pounds), not the least variation was perceived in the index. The same cork, with its sand cone, was also floated on water, and the empty tube held over it, and then sand poured gently in, to the extent of several pounds; and yet it sank not. Thus proving, as did also many other experiments, especially the putting a little sand in a tube fitted with a rammer, and then endeavouring to push it out, but the tube would twist sooner than the sand be moved. A piece of wet paper, also, at the bottom of a long tube, would imprison a column of sand several feet in height; sustaining, by its slight adhesion, merely its little cone, and all the rest being supported, as before, by the vessel's sides. This furthermore gives the principle of a practice which has been by chance adopted, of filling the holes with sand which are made to blast rocks, and which formerly used to be rammed down with much danger, as the powder would occasionally explode from the violence exerted; for it is found that the rock will rather rend than the loose sand be ejected from the hole;—the principle of which is, that the whole force exerted on the areal column is immediately transferred to the solid sides of the rock itself.

In the library were the improved steel-yards of Messrs. Rowland and Macmillan, a very compact and very ingenious application of compound



levers; Fayrer's new metallic hone; a young alligator, and some beautiful medallions of the late Sir T. Lawrence, modelled by Bailey, and cast by Parker.

## COURT OF KING'S BENCH,

WESTMINSTER, APRIL 26.

(Sittings at Nisi Prius, before Lord TENTERDEN and Special Juries.)

## ANDERDON v. BURROWS AND OTHERS.

This was an action for assaulting and falsely imprisoning the plaintiff.

The Attorney-General, Mr. Brougham, Mr. Adolphus, and Mr. Platt, were engaged for the plaintiff; Mr. Denman, Mr. Law, and Mr. Alderson, for the defendants.

As soon as the pleadings had been opened by Mr. Platt, the counsel conferred together with a view to effect a compromise.

The Attorney-General addressed the Jury. The conversation that had been going on between him and his learned friends had been with a view to arrange matters so as to avoid a public discussion, which could not be pleasant to either party. As, however, his endeavours had been ineffectual, it was now his duty to address them. The plaintiff, Mr. Freeman Anderdon, was the son of a gentleman who had been formerly engaged in mercantile pursuits, and was the partner of Mr. Manning. Mr. Anderdon, the father, who was well known, had acquired a considerable fortune. He had several sons, whom he sent out in the world for the purpose of improving their fortunes, and enabling him to retain a portion of his property for his other children. Mr. Anderdon, sen. was still alive. The plaintiff, Mr. Freeman Anderdon, had been engaged in the business of an underwriter, which business he still carried on through the means of an agent. He had seen a good deal of the world, but he was fond of a retired life, and his habits were those of frugality. He had for some time resided in York-street, Lambeth, and, as he had lived in great retirement, he had not found it necessary to have any establishment of servants. He was a bachelor, and the pursuits which he followed for his own amusement were perfectly innocent and lawful. He had never been suspected by his neighbours or others, who were in the habit of seeing and conversing with him, of being afflicted with that malady under which some portion of mankind unfortunately laboured—namely, insanity. The declaration in this case was for a trespass; and it ascribed to the defendants an endeavour to make him the subject of a lunatic asylum, upon an imputation that he laboured under that disorder. If that imputation were unjust—and he (the Attorney-General) should show that it was—the mode in which the trespass had been committed had greatly aggravated the conduct of the defendants. In the summer months Mr. Anderdon had been accustomed to wear a straw hat, and he generally amused himself by going on the water. He had worn his straw hat during the last sum-

## MEDICAL GAZETTE.

Saturday, May 1, 1830.

“*Licet omnibus, licet etiam mihi, dignitatem Artis Medicæ tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso.*”—CICERO.

## ANDERDON v. BURROWS.

WE think it right to place on record the result of this unfortunate business: any observations we might have been inclined to offer were given by anticipation in a former article (see Gazette, Dec. 5th, vol. v. p. 311). We have had an opportunity of perusing certain documents which have not been made public, and we have no hesitation in admitting that the representations on which Dr. Burrows acted were of the strongest possible nature.

The account which follows is taken from the Times: we have given at full length the speech of Sir James Scarlett against the defendant, Mr. Denman's answer, and Lord Tenterden's charge. We cannot think that the Common Sergeant acted judiciously in stating that the amount of damages was a matter of little importance to Dr. Burrows: this probably led the Jury to give more than they would otherwise have done; but the public, who do not look deeply into such matters, will be apt to estimate the magnitude of the offence by the amount of the penalty—and this is very high indeed. That the act was illegal, is apparent and undeniable;—the extent of the difficulties, and peculiarity of the circumstances which led to it, we are not at liberty to disclose.

mer, and did not leave it off till the month of November, the time when the transaction in question took place. On the evening of Sunday the 1st of November, two persons came to his gate, and seeing him standing at the door of his house, asked for Mr. Anderdon. He told them that he was that person, and they then took hold of him, and said he must go with them—he was their prisoner. These two persons were the defendants, Thomas Hazard and John Shelly. Mr. Anderdon was, of course, a good deal surprised at the rude attack; but they kept their hold of him, and proceeded to take him in a direction from his own house. He made resistance, and called to his neighbours, who assembled about him and remonstrated with the men for their conduct. At length all the parties were taken to the watchhouse, and when there, one of the defendants was asked his reason for acting as he did. He said he came from Dr. Burrows, and had an authority from that gentleman; he, however, did not produce it at the moment, but on his being requested to show it, he took it out of his pocket and produced it. It was read by one or more of the persons assembled, and it purported to be an authority, signed by Dr. Burrows, an eminent physician, who had had much practice in cases of lunacy. The paper was in these words:—

“By direction of Mr. Oliver and James Anderdon, I hereby authorise the bearers to take charge of Mr. Freeman Anderdon, he being insane, and confine him in his own house.

“G. M. BURROWS, M.D.

“17, Montagu-street,  
Russell-square.”

This paper was put into the hands of the constable, who, on perusing it, said it was no authority to the men to confine Mr. Anderdon, and he could not allow him to be confined. On the constable's making this observation, the tide turned against the two men who had dragged him to the watchhouse, and every one present took part with Mr. Anderdon, who had never been suspected of being an insane person. The constable then received a charge from him against the men, and he was liberated. The present action was brought for the assault and imprisonment of his person. That assault and imprisonment Mr. Anderdon conceived to be aggravated by the motive and object in which it had originated. On the next day after this occurred, an inquiry took place before the magistrate at Union Hall office. The magistrate, in the first instance, seemed to think that the inquiry ought not to be merely whether Mr. Anderdon had been assaulted and imprisoned, but whether he was or was not insane. Mr. Anderdon was desirous of giving an opportunity to every person who was acquainted with him and his

habits of life to come forward to speak to that fact. He was willing that every species of evidence should be received. Accordingly, he and his solicitor waited a considerable time, but nobody having come forward to give evidence to justify the defendants' conduct, the magistrate saw that there was no ground for detaining him, and he took his departure. In the course of the day Dr. Burrows went to the police-office, and made a statement to the magistrate, from which it appeared that in acting as he did he had relied on the information of others, and had not himself seen Mr. Anderdon. He therefore was clearly amenable for his conduct. The only circumstance to give any colour to the pretence for confining Mr. Anderdon as a lunatic, was that which the learned counsel would now state to the jury. Mr. Anderdon was a man of fortune; he had many thousand pounds in the hands of Mr. Manning, and he was possessed of other funds. He kept a good account at the banking-house of Messrs. Bosanquet and Company, and his cheques down to the month of October last had never been dishonoured. In the course of that month a draft, which he had drawn in favour of Mr. Young, a picture-dealer, was refused. Mr. Anderdon went to the banker's, who made some apology for dishonouring the draught, and Mr. Anderdon afterwards drew another. That also was refused, and then Mr. Anderdon went again to the banking-house, and, expressing great indignation at this conduct, demanded payment of his balance of 1040l. This was at first refused; but they afterwards promised to pay, on a threat of an action against them. One of the partners in the house of Messrs. Bosanquet and Co. was a brother of Mr. Anderdon. Mr. Anderdon being a prudent man, and having amassed a large sum of money, he determined to invest a considerable part of it in the purchase of pictures, for which he had a very great taste, and by the purchase of which formerly he had very much increased his fortune, most of the pictures being worth considerably more than he had given for them. His brother, however, thought it likely that he might, by his purchases of pictures, squander away that money which he and other relatives expected to be benefitted by at his death. This was the only fact to account for the refusal to honour the draft in favour of Mr. Young, the picture-dealer. On the threat of an action by Mr. Anderdon's attorney, the balance of the account at the banking-house was paid. Now, what would have been Mr. Anderdon's situation if none of his neighbours had been at hand to come to his assistance? He would have been confined in his own house for that night, and, on the next day, Dr. Burrows would have come to him, and the public probably would have known nothing of what had taken place; the re-

mainder of his days would have been buried in silence, and, though he might probably have been treated with kindness, the management of his property and affairs would have been taken from him, and placed in the hands of those of his relations who had instigated the proceeding against him. It was fortunate for him, therefore, that he was within hearing of his neighbours, and that they came to his assistance. They would be brought forward as witnesses to-day, and they would one and all state that they had no reason even to suspect that he was ever afflicted with insanity. The learned counsel was ready to admit that where an individual did labour under an aberration of reason, his friends were justified in interfering to protect him against his own want of discretion, and ought not to be visited with a serious amount of damages in a court of law. If, therefore, the jury should be of opinion that Mr. Anderdon was a fit subject for such a proceeding as that which the defendants had adopted, he (the Attorney-General) would admit that that fact would go a great way towards mitigating the damages, though it would not affect the verdict, because, as there was no medical certificate, the defendants could not in law be justified in what they had done. He was instructed, however, to throw down the gauntlet to his learned friend, and challenge him to prove that Mr. Anderdon was a person who was unfit to be trusted with the management of his affairs. He (the Attorney-General) should shew, by the witnesses whom he should call, that no conduct of Mr. Anderdon's, however eccentric it might appear to some, was to be ascribed to an aberration of reason. His habits had been those of a retired life, and he had been accustomed from his earliest days to economize. If his income at any time amounted to only 250*l.* a year, he made it a rule to live within that sum. That, surely, was no proof of want of prudence or discretion. His taste for pictures he had acquired from his father, who had been a distinguished collector. All his sons had participated in his taste, and the plaintiff, Mr. Freeman Anderdon, in particular. He had undoubtedly expended several thousand pounds in the purchase of pictures, but he had increased his fortune by it. A particular circumstance connected with his purchase of a lot of pictures recently, was stated before the magistrate at Union-Hall. Mr. Young, a picture-dealer, had sold him a picture for 400 guineas. Shortly afterwards, Mr. Young having been asked for the picture by somebody who had seen it, and wished to purchase it, made Mr. Anderdon an offer of 450 guineas for it. That Mr. Anderdon's collection of pictures was valuable there could be no doubt. He (the Attorney-General) had not seen them, and if he had, his judg-

ment would not be worth a farthing; but Mr. Anderdon himself, and others who were judges of them, were convinced that, if he wished to sell them, they would fetch fifteen or twenty thousand pounds. Might he not, then, though he had lived in privacy, have a taste for pictures without being subject to the imputation of being deranged? Then, with respect to his large straw hat, and the imagined singularity of his dress, was the wearing of a straw hat and a particular dress by a man who did not mix in society, to be taken as a proof of aberration of intellect? Mr. Anderdon was very fond of employing himself in his garden, and that circumstance had been relied upon as shewing a singularity of disposition. A singularity it perhaps was, but it was a singularity of good taste, and shewed how much he was attached to innocent pleasures. Many wise men had done the same. He (the Attorney-General) knew one gentleman in particular—he meant his friend Mr. William Harrison—who employed himself in a similar manner, putting on his dress and working in his garden for some hours before he went to attend to his public duties. That gentleman had never been suspected of a want of reason, nor had several of Mr. Anderdon's neighbours, who possessed the same taste for gardening as himself. There was nothing in the history of Mr. Anderdon's life which any one could point to as unnatural, and, until the occurrence in question, no attempt had been made to deprive him of his liberty, nor had any such attempt been made since. No commission of lunacy had been issued against him, nor any step taken to shew that the defendants were justified in what they had done. Mr. Anderdon had led a most inoffensive life, and his neighbours were unanimous in speaking of him as a person in no respect deficient of intellect. He therefore was perfectly ready to go into any inquiry that the defendants might think proper. If any inquiry should be gone into, he (the Attorney-General) should have an opportunity of addressing the jury again; if not, if no evidence should be offered on the part of the defendants, the case would stand thus:—Two of the defendants, by the authority and under the direction of the other, had come to the house and assailed the liberty of one who had a right in every respect to be considered as a free agent, under the horrible pretext that he was a lunatic, and excited in him the fear that he should, if the plan were successful, be imprisoned for life. The two men brought with them a bag, and on one of the persons present expressing his desire to see the contents, it was opened, and found to contain cords, manacles, screws, and other articles. This shewed what the intention of the parties was, and if they had succeeded in carrying this gentleman off, a commission of lu-



nacy would have been issued, and he might never have been heard of again. The idea was revolting to humanity. Unless, therefore, the jury should be satisfied that Mr. Anderdon was a fit subject for this proceeding on the part of the defendants, it was due to themselves and to the public generally not to allow a man, on a suspicion unfounded, and a motive unjust, to be carried off in this manner for the purpose of being confined as a lunatic; and they would, he trusted, mark their sense of the defendant's conduct, by giving the plaintiff an ample and liberal measure of damages.

[Evidence, which our limits prevent us from inserting, was then called to prove the various statements above made. The witnesses all thought that Mr. Anderdon was of sound mind; but the facts elicited by cross-examination will probably be regarded as entitled to more weight than the opinions so expressed.]

The *Common Serjeant* then addressed the jury for the defendants. He expressed his regret that the matter had not been arranged without an investigation, which must be painful to persons of the greatest respectability. On the part of Dr. Burrows, however, he was bound to declare that he considered a public investigation as the thing above all others to be desired. No man could be more anxious that his conduct should be considered by a jury, and he came before them in the perfect confidence that he had acted for the best, for the dearest interest of society, and that he was only an object of enmity to persons who basely took advantage of the unfortunate plaintiff to bring him into a court of justice as prosecutor in this case. His learned friend had told the jury, that he (Mr. Denman) was bound to prove that the plaintiff was of unsound mind at the time the assault was committed. He would, however, decline to undertake that task, though, if it were necessary to demonstrate that he was of unsound mind, he should consider the bringing of the present action one of the strongest proofs in support of that proposition. It was a proof not merely that the plaintiff's mind was in a strange unhappy perverted state, but also that he was not a free agent, but the unfortunate and degraded victim of others. Without questioning that the verdict of the jury must be for the plaintiff, all that he was bound to shew was, that Dr. Burrows had acted upon honourable motives, such as a medical man ought to be swayed by, and had been no party to any kind of conspiracy. Dr. Burrows had acted under a terrible responsibility, and he therefore trusted the jury would be of opinion that the smallest possible damages would perfectly satisfy the ends of justice. He did not mean to conceal that the amount of damages would not affect Dr. Burrows in a pecuniary point of view. The jury must have perceived

that he had acted upon the suggestion of others, who would hold him harmless on this occasion; but although those persons would have gladly sacrificed more than the utmost extent of what the jury might give, multiplied a hundred fold, yet if the jury were to give more than the most inconsiderable damages, it would be injurious to the character of a professional gentleman whom it had recently been attempted to ruin by a series of calumnies such as perhaps no individual in his situation ever encountered before. Should the jury give large damages on this occasion, it would hold out a temptation to persons in the plaintiff's unfortunate condition to place themselves in the hands of a class of men whose object was to extract money from the pockets of their families. He was sorry to hear his learned friend state, in compliance with his instructions, that if the plaintiff had not been rescued from the two defendants who obtained possession of his person, he would have been buried from the world, and that all inquiry respecting him would have been stifled. He repelled that imputation in the strongest terms. It was in evidence that for a series of years the plaintiff had been going on in a most extraordinary manner. He had been in the habit of wearing a waterman's coat, not only upon the river but on shore, when he went to be shaved, and on other occasions. It was a striking fact that no intercourse had taken place between him and any member of his family for the last fifteen years. It was not alledged that this state of things had been occasioned by any quarrel with his relations. Supposing there had been some disagreement between him and his brothers, his respectable father was alive, and yet between him and his son there had been no intercourse whatever. So long as twelve or thirteen years ago the plaintiff's estrangement from his family was complete. It was evident that he had lost his caste in society, and kept company with persons unworthy his education and his rank in society. It was stated that the plaintiff was an underwriter, and conducted his business through the medium of an agent. It was remarkable that that agent had not been called to inform the jury how the plaintiff was in the habit of transacting business with him. No proof had been offered of the plaintiff's having exercised his pen, either in the way of business or in communicating with men of his own rank. The jury had heard the plaintiff's witnesses describe him as wearing this extraordinary coat and hat, allowing his beard to grow, living for the last three years in a miserable hut, without a servant to minister to his necessities, and carrying through the streets a flag-basket, such as the wife of a poor tradesman would take to Covent-Garden-market to bring home vegetables in. Did not those circumstances establish a case of suspicion respect-

ing the plaintiff's sanity? Much stress had been laid upon the plaintiff's shrewdness in money matters, but narrow and parsimonious habits were not inconsistent with perversion of intellect. As long as the plaintiff's peculiarities were confined to the circumstances which he had mentioned, his family did not interfere with him, and they took no steps until they had the strongest reason for believing that his property was likely to be dissipated. It was impossible the jury should not have observed that all the witnesses for the plaintiff appeared to have their feelings enlisted in his favour. That was not extraordinary. All restraint was odious to Englishmen, and the bare suspicion that the plaintiff's relations intended to place him under restraint with the view of preventing him from disposing of his property, was sufficient to rouse their feelings in his behalf. Yet, notwithstanding the disinclination of the witnesses to say any thing which might have an unfavourable effect against the prisoner, one of them, Mr. Robson, being asked whether the plaintiff ever dressed like a gentleman, answered, "No, he never did." The screws and other instruments which the two defendants carried with them when they went to seize the plaintiff, were not intended to be resorted to, except in the case of resistance and violent conduct. The certificate had been produced, in which Dr. Burrows stated the plaintiff to be insane, and authorized him to be taken. Dr. Burrows, it was true, had not seen Mr. Anderdon when he signed that certificate; but it was usual to sign such certificates upon the representations of the family of an individual in Mr. Anderdon's situation. Dr. Burrows could not obtain any knowledge of the state of the plaintiff's mind, except by adopting the course to which he resorted, for the plaintiff not being on terms of friendship with his family, would not, of course, allow the doctor to visit him on their part. A candid construction ought to be put upon the conduct of Dr. Burrows. If improprieties were committed by members of the profession to which that gentleman belonged, they were exceptions, and not the rule. Although the plaintiff had been seized by the two defendants, he stated that they had behaved to him with great civility, and that he had no complaint to make against them. That was the assault which the jury had to try. The evidence which had been brought forward had not at all removed the impression of the plaintiff's unsoundness of mind which his conduct created. One of the witnesses described him as being a good gardener; another said that he had maintained a learned conversation with him upon the science of music. He would tell the jury what Mr. Hand, the baker, meant when he said that the plaintiff maintained a sensible conversation respecting music. He meant that he assented to every thing which he

said. This reminded him of an anecdote respecting a friend of his, a distinguished scholar, lately deceased—he meant Dr. Parr. That learned individual once fell into a mistake by supposing that an individual who knew nothing at all about the subject was almost as good a Greek scholar as himself. The mistake occurred in the following manner:—The doctor happened to be placed, at an electioneering dinner, next a man of the lowest class of society, who had not the least knowledge of Greek, and never pretended to it; but he listened quietly to all that Parr said, replying only by frequent nods of the head, and the doctor went away, convinced that he had met with a man who was almost as good a Grecian as himself. Similar acquiescence on the part of the plaintiff had no doubt attained for him the high character for musical knowledge which he had that day received at the hands of Mr. Hand. The only conspiracy in the case was a conspiracy which certain designing persons had formed, in order to obtain possession of the plaintiff's property. Sharpers always abounded in this great metropolis, and their allies were too frequently to be found amongst that class which Johnson had designated in his verse as—

"The fell attorney that roams for prey."

With these observations he would leave the case with the jury. He admitted that the verdict must be against the defendants; but unless he was painfully mistaken, the smallest possible damages would be given.

Lord Tenterden said, that the only question which the jury had to consider was the amount of damages. The conduct of Dr. Burrows, in signing a certificate of the plaintiff's insanity, without having seen him, and sending two persons to secure him, was contrary to law. He was sorry to hear it stated that it was usual for medical practitioners to act in that manner. In estimating the amount of damages, it would be necessary for the jury to consider whether there was probable cause for supposing the plaintiff to have been of unsound mind at the period when the assault was committed. With reference to this point, the plaintiff's singular estrangement, not only from his family, but from persons of his own rank, and his extraordinary mode of dressing and living, were circumstances which should not be overlooked.

The jury then retired, and after being absent three quarters of an hour, returned into court with a verdict for the plaintiff—Damages, 500*l*.

## HOSPITAL REPORTS.

## GUY'S HOSPITAL.

*Case of extensive Abscess in Thigh and around Knee.*

BARBARA BOUTON, naturally a stout and healthy woman, 22 years of age, admitted to-day (Dec. 9, 1829.)

When mangling, six weeks ago, she sprained and struck her knee against the machine. It became painful, red, and swollen, and she was obliged to lay up the limb. The pain increased, and a medical man, who was called in, ordered the parts to be poulticed. In a few days the lower half of the thigh, the knee, and upper part of leg, had swelled prodigiously. Ten days before her admission an opening was made just above the inner side of the knee, over the vastus-internus muscle; and she says, that *four quarts* of matter escaped then and during that day. She had suffered very much previous to this. There has been a very copious discharge since, and she is much weakened by it.

The limb lies on its outer side, bent to a right angle; it cannot be further extended without great pain. There is no redness, but the swelling is considerable. A probe, or rather the stilet of a catheter, can be passed from the wound, upwards, half way up the thigh, and downwards to about three inches below the knee; also a little way towards the ham, backwards. The joint does not appear to be affected. There is no pain, except when touched. Pulse quick and frequent; tongue moist.

10th.—The discharge has been so excessive, that it has literally soaked through the bed on to the floor. A counter opening was made at the upper part of the abscess, half way up the inner side of the thigh. As she lies in bed, this is the most depending part of the abscess.

A large poultice over the parts.

To have a pint of porter daily.

12th.—A second counter-opening has been made at the lowest part, being three or four inches below the inner side of the knee. There are thus two counter-openings, one at each end of the abscess; the limb is placed on the double inclined plane, so that both these openings afford a free exit to the matter. The apparatus is at an angle of about 95°. Patient sleeps well; is not in pain. Bowels open; tongue moist; pulse quick and frequent, very weak.

Ordered.—Continue the porter.

Vini rubri,  $\mathfrak{z}$ vi. quotidie.

Mutton chop for lunch.—Meat for dinner.

Habt. Quinina Sulph. gr. iij. ex Infus.

Rosæ c. cum  $\mathfrak{m}$ vi. Acidi Sulph. dil. ter die.

14th.—The limb is easy, and there is a free discharge from both openings. Pulse quick, and very frequent—140 in the minute; tongue moist; face habitually flushed. There is a regular exacerbation every night, from midnight to day-break. The knee to be gradually extended by daily lowering the double inclined plane.

17th.—Says she feels better and stronger. Pulse less frequent, and more powerful; tongue moist; limb lies at an angle of about 125°, not nearly so much swollen as it was; discharge free from both openings, chiefly from the lower one; some matter has gravitated backwards into the ham, which it is proposed shortly to evacuate by another opening.

21st.—Discharge free and much less abundant; limb lies now at about 160°, very easy; her health is improving; appetite good; hectic flushes very trivial.

28th.—Limb is now nearly straight, and the collection of matter in the ham has been evacuated by pressure through the first opening.

9th Jan.—Limb is now quite straight, and she has power to bend or to raise it up (straight) from the bed; there is now very little discharge; a roller is applied from toe to hip, and the splint removed.

Continue the medicines and diet.

9th Feb.—She was discharged quite well.

*Case of Acute Abscess in Left Iliac Fossa.*

W. Wade, æt. 28, admitted into Naaman's ward, 3d March last, for a bubo in the left groin, which had opened, and become hollow. However, on examination, it appears that three weeks since, without any previous tangible cause, he was seized with headache and pains across his chest; in a week after this, a lump appeared in his left groin, which pointed, and broke four or five days afterwards. A good deal of matter discharged for two or three days, and then ceased. After this he had severe deep pains in the part shooting back to the loins, and preventing both sleep and exercise. He has never had any venereal disease, nor has he received a blow in the part. The general excitement and fever is much more than can be explained by the small hollow abscess in the groin.

Ordered.—Extr. Hyoscyami gr. v. o. n.

Mist. Salinae et Træ. Calumbæ  $\mathfrak{z}$ j. ter die.

11th.—Close examination to-day gave pain on pressure in the left lumbar region, and every where about the lower part of belly and upper thigh on that side. He lies with the thigh semiflexed on the pelvis. There is much distress and great suffering. An indistinct fluctuation was detected deep in the groin.

Cataplasma cerevisiæ, et continuent medicamenta.



15th.—His sufferings have been great. To-day, matter can be felt deep in the groin and left fossa iliaca; tongue white; pulse 120, quick, and somewhat hard. The walls of the abscess appear to extend up as far as the crista ilii, thence across forwards to the pubes, and downwards a little below the line of Poupart's ligament: these parts are exquisitely painful on pressure.

An opening with the lancet was cautiously made by the dresser, about a quarter of an inch below Poupart's ligament, (being the lowest part where matter was felt,) about an inch to the inner side of the femoral vessels, and close to the outer side of the cord. About  $\text{℥iv}$ . of good pus immediately gushed out. The opening was then enlarged on a director upwards and outwards, parallel to Poupart's ligament, for the space of an inch, care being taken that no important part was taken up on the director. This dilatation was effected with the probed bistoury. Towards the end of this cut, a large gush of venous blood took place, from the division of some superficial vein. This was stopped by plugging the wound with lint, and a compress.

8, P.M.—Patient had a shivering fit for an hour and a half after the discharge of the matter; he then fell asleep for several hours. The plug was removed, and there came out without pressure  $\text{℥vj}$ . or  $\text{℥vii}$ . of good pus mixed with a few clots of blood, but no active bleeding; he is more free from pain than he has been for the last month; bowels not open to-day; pulse remains quick; tongue white, and face flushed; has perspired abundantly. The finger passed into the wound went into a large cavity, as if over the iliacus muscle, behind the peritoneum.

A large poultice over the wound.

16th.—Throughout the night has been in a state of delirium, which has not yet subsided. Pulse 124, quick; tongue dry and brown; face flushed; skin hot; bowels open. Plug removed, and about  $\text{℥iv}$ . of thin matter let out; this was followed by a smart hæmorrhage, which was arrested as before, by means of a plug and compress.

Ordered.—Calomel. et Opii aa. gr. ij. statim.

Træ. Hyoscyami  $\text{℥ss}$ . et Mist. Efferves. 4tis horis.

17th.—Is more calm to-day; tongue dry; pulse quick, 110; bowels much relaxed, stools being thin and bilious; has pain on pressure of the epigastrium; is troubled with a cough, which throws out the plug, and renews the bleeding. This morning there came a full gush of venous blood, which was stopped as at first, leaving a space for the exit of matter at the lower and inner angle of the wound.

Calomel. et Opii. aa. gr. iss. h. somni, et Pergat, &c.

18th.—Had a severe shivering this morning, and now (11 A.M.) is perspiring strongly; pulse 132, small; tongue dry and rather brown; is very thirsty; no pain in the abscess; the plug being removed, there followed a little sanious matter, of most offensive odour: it was doubted whether this was the smell of putrid blood or of fæculent matter; bleeding returned, and the wound was again plugged; bowels still relaxed.

Contin. Cal. et Opium h. s. et Mistur. Efferves.

19th.—This morning the plug has worked out into the poultice, and no bleeding has recurred; an ounce of fetid sanious matter with a clot of blood were pressed out of the abscess; pulse 148, small and weak; countenance more tranquil; tongue not so dry; has had two rigors this morning, and is now perspiring greatly; bowels still loose.

The patient remained pretty well till 4, P.M. at which time he coughed somewhat violently; bleeding from the wound came on, and he lost about half a pint of blood. When the dresser of the week arrived, the bleeding had ceased. Now (8 P.M.) he is much depressed; pulse scarcely felt at the wrist; is quite delirious, and disposed to get out of bed if not restrained; complains of severe pains and aches all over him. 10 P.M. has just had another rigor, and is bedewed with sweat; pulse 160, very feeble; tongue much coated, but not dry; countenance somewhat wild; no more hæmorrhage.

Arrow-root flavoured with wine to be given from time to time.

Calomel. et Opii aa. gr. j. h. s. et pergat.

20th.—Has had a moaning restless night, and is scarcely sensible now. Pulse 132, small and feeble; tongue coated; skin hot; features shrunk; is in general pain; not more than a table-spoonful of the same fetid discharge from the wound. At two o'clock he lost  $\text{℥ij}$ . or  $\text{℥iij}$ . of blood. The finger passed into the wound could arrest the hæmorrhage by pressing the skin against the thumb. The plug was renewed, and soon after he had another severe rigor.

10 P.M.—Is less rational, and disposed to be very unquiet; bowels relaxed; thin clayey stools; tongue coated and dry; pulse very feeble and frequent. The skin around the wound looks shining and smooth, and on pressure is tender; no more bleeding.

21st.—He went on in this state through the night, rambling very much, and gradually sinking. He died at 9 o'clock this morning.

The body was inspected 28 hours afterwards.

Underneath the fascia iliaca, and over the psoas and iliacus muscles, penetrating a little into their substance, was found the abscess. It extended up along the

psoas, not quite to its origin; downwards it dipped into the pelvis by the side of the bladder, behind the pubes; and over the pubes it passed deeply down for three or four inches, in the direction of the psoas and iliacus muscles towards the trochanter minor. No bone could be felt denuded any where, nor was there any apparent disease of spine to which this abscess might have been ascribed.

The abscess contained a small quantity of putrid ichor, with a few coagula. The parts which formed its walls were livid, and easily lacerable, as were the iliacus and psoæ muscles especially. The external pudic vein had crossed the abscess, and had been divided just before it entered the femoral vein. The last vessel and accompanying artery were much raised up by the abscess, and were involved in the disorganization and livid slough around: their coats were entire. The inner surface of the artery was more injected than usual; that of the vein was natural. There was a string of fibrin in the vein.

### ST. THOMAS'S HOSPITAL.

#### *Fracture of the Spine, with Paralysis—Favourable termination.*

**JOSEPH STOCKWELL**, 15 years of age, admitted into Abraham's Ward on the 24th of November, under the care of Mr. Green. He stated that a cask fell on him from a height, which struck him down and stunned him. At the time of his admission, which was shortly afterwards, he had recovered from the stupor and was then perfectly sensible, but could not tell where he had received the blow; that a cask had fallen upon him, was the only account he could give. He complained of a good deal of pain between the shoulders, with tenderness on pressure, and pains shooting from this part through the chest and towards the axilla; all power of voluntary motion was lost in the lower extremities, but a sense of numbness existed in them, and likewise over the abdomen; motion in his upper extremities continued perfect, and sensation but little or not at all affected; priapism and loss of power over his bladder were present, and his ribs moved but very slightly during respiration, which was the result only of the expansion of the lungs, but he breathed easily by the diaphragm; and he had a slight cough, which produced pain in the epigastric region when it occurred. On examination of the bony column, an evident depression was detected just below the spinous process of the second dorsal vertebra, which was the only irregularity then perceived. He was ordered to have ten leeches to the back, and to take ten drops of tincture of henbane in an ounce and a half of saline mixture,

every six hours. The catheter to be used. On the following day the pain in the axilla had increased; the urine was tested and found acid, as was likewise that which was drawn off on the preceding evening. Priapism somewhat less. On a more minute examination, the spinous process of the third dorsal vertebra was observed to be moveable, and Mr. Green was of opinion that the body of the bone was fractured. After a consultation, it was determined not to perform the operation for trephining, but to lay the patient upon a fracture-bed, with a trap-door so constructed that he might be examined without moving him, which was done towards the evening. In consequence of not having had an evacuation per anum, he was ordered an enema, and twenty more leeches to the spine. Pulse about 100, and compressible.

26th.—Has slept well, and is quite free from pain; sensation more perfect in his lower extremities, and also over the abdomen; has observed a slight motion in his legs; bowels have acted several times, and are under the control of the will; when he attempts to pass his urine, he says he feels it rise to within an inch of the orifice of the urethra.

31st.—His pulse is natural, and he says he feels himself quite easy; is able to move his left leg a good deal, but the motion of the right is much more limited.

Dec. 5th.—He is going on well, and the urine continues acid. On the 2d there appeared a little excitement, and he had occasional priapism.

10th, 15th, and 23d.—He is now able to move his right leg very considerably; on the 10th the priapism had entirely subsided, and on the 15th there appeared to be a little action in the intercostal muscles, which have now regained more of their habitual motion.

April 12th.—From this time he was confined to bed until he had remained there about twelve weeks, when he was allowed to get up. The healthy functions were then more fully established; he could not, however, bear the weight of his body on the left lower extremity, but he walked with the assistance of crutches, which he continued to use, gradually bearing more and more upon his feet. After having used them rather more than six weeks, he left them off, and is now (April 12th) able to walk as well as ever with the left leg, but limps with the other. He says he feels a stiffness in the hip and knee-joints, and is not able to flex and extend the ankle-joint as usual, consequently he walks flat-footed on that side. On tracing the spinous processes of the dorsal vertebrae, there is a slight diverging from the natural line of the projection of the third: the irregularity inclines to the right side.

## CHARLESTON HOSPITAL.

*Observations on Pyroligneous Acid in Gangrene.*

By THOMAS Y. SIMONS, M.D.

IN a late number of the American Journal of the Medical Sciences, the conductors have done me the honour of taking notice of my successful use of the pyroligneous acid, in sphacelus, and phagædenic ulcers. As I regard this remedy of great value to the surgeon, and have since 1824 used it with uniform success and satisfaction, I am induced to make a few remarks on the manner of using it, and to relate three cases, which were considered so desperate as to leave little hope of recovery, in which it proved efficacious. I beg leave to premise that I never read or heard of the acid being used for any other purpose than as an antiseptic in preserving meat, antecedent to my employing it, and I was led to use it from the fact of my believing that if it was so powerful on dead matter, it would be much more efficient when it was aided by the vital principle. Although long convinced of its value, I could not induce medical gentlemen in general to try it, they believing other established antiseptic remedies equally salutary, if not superior, until the cases which I shall presently relate were brought so strikingly to their view.

There are two kinds of pyroligneous acid found in the apothecaries' shops; one is transparent, and when agitated, shews small crystals floating in it; the other is dark and smoky; both have the empyreumatic odour. The former is the kind I use, and is by far the best.

When I first used this acid, I diluted it with six times its quantity of water; but since I have employed it diluted with equal parts of water, gradually diluting as the sore assumes a healthy appearance, until it becomes as weak as one twenty-fourth. It should always create a smarting sensation. The manner of applying it is to put over the ulcer some lint, which is to be kept constantly wet, and changed two or three times during the day, according to circumstances. The ulcer ultimately assumes red granulations resembling the inside of the pomegranate. If the acid be too strong, it will make it turn white, and assume the appearance of a slough.

CASE I.—William Smith was brought into the hospital, May 9th, suffering under mania a potu. After he was relieved of this disease, I observed in the anterior part of his right leg, a dark spot occupying about two-thirds, where a blister had been applied, as he informed me, previous to his entering the hospital. The commencement of mortification was evident, and I ordered him at

first bark poultice, not having at that time the pyroligneous acid in the hospital, and the following constitutional treatment:—

R Sulph. Quinine, iv. grains; Aq. Fontana, ℥viiij.; Acid Sulphuric, xx. gtt. Two table-spoonsful to be given every two hours during the day; at night he was given two grains of opium and five grains of camphor. He was allowed a pint of porter and a meat diet.

This course was continued for two days, but without checking the gangrene; indeed it was so rapidly advancing, that several physicians were of opinion that immediate amputation would be necessary. Having, however, obtained the pyroligneous acid, I resolved to use it first; accordingly, I made free longitudinal and transverse incisions to the full depth of the gangrened portion, and then water and pyroligneous acid, in equal portions, were applied constantly in the manner already described, and the constitutional treatment was continued. In twenty-four hours a line of demarcation was formed, and in twenty-four hours more the gangrenous portion was separating from the healthy part. In seven days the whole of the gangrene was removed, and a healthy surface was presented. The acid giving pain was diluted to one-sixth, and ultimately to one twelfth; and on the 26th September the patient was dismissed cured. The length of time of healing was produced, I think, from my omitting the acid after healthy granulations were formed, and using the adhesive straps.

CASE II.—Edward Campbell, from St. John's, Berkely, South Carolina, came into the hospital on the 24th of August. He said that about Christmas he got a bruise on his shin, which he neglected. It was afterwards quacked with by some old woman in the parish, until it assumed the character which I shall now describe. There was an extensive sloughing ulcer, deep, irregular, and jagged, extending from the lower portion of the tibia two-thirds upwards, exposing a part of the bone which was carious, and the tendon of the extensor longus digitorum pedis. The fætor from the ulcer was so great as to induce me to remove the patient to a place separate from the other inmates of the hospital. My patient was extremely emaciated and hectic, and I observed to the medical gentlemen and students who were present, that I had no hopes of saving the limb, but that it was desirable to place him under constitutional treatment, so that I might improve the conservative principle of the system (to adopt Sir G. Blane's language), previous to my amputating the leg, and that I would apply the



strongest solution of the acid merely to correct the fætor. The treatment was—

R Sulph. Quinine, vi. grains; Acid Sulph. xx. gts.; Aq. Fontana, ℥viij. Two table-spoonsful every two hours during the day; at night two grains of opium, to lessen irritation and procure sleep, which he had not enjoyed for some months. The diet was a pint of porter daily, and beef-steak.

In two days the fætor of the ulcer was overcome. In ten days it was much improved, and I took away a large piece of bone which had exfoliated from the tibia. In four days more I removed with the knife a considerable slough of the tendon of the extensor longus digitorum pedis. From this time the ulcer began to improve rapidly, and healthy granulations appeared. This course was persevered in for some time with continued improvement of the leg, when my patient suffered it to be kept hanging down, causing the blood to determine and stagnate at the ulcer, when an extensive sloughing and gangrene commenced (the acid having then been omitted), which continued for three days, until the pure acid (the brown and smoky one having been sent me by the apothecary, which proved inert) was obtained, which checked its progress in twenty-four hours, and removed it altogether in a week. The patient was made to keep his leg elevated, and the acid was continued until Nov. 7th, at which time the leg had almost healed, and the acid was omitted.

CASE III.—Charles Belton was brought into the hospital on the 13th of September, suffering from the effects of intemperance. I observed a red suffusion over his left thumb, with considerable tumefaction; he complained of its giving him great pain; I ordered a poultice of bread and milk. This was continued for three days, when the inflammation increased, became more painful and tumefied; a fluctuation was felt as if there was matter, and there appeared to be a disposition to point over the second articulation of the thumb. I made a free incision, when very little matter escaped, but a great quantity of blood. On the next morning, I was informed that upwards of two pounds of blood had come from the wound, although I regarded this quantity as exaggerated. I found, upon examination, the wound had all the appearances of fungus hæmatodes. It spread out on each side of the incision like a mushroom, was fungous, very vascular, and oozing blood at every part. So formidable an appearance, in so short a time, left little hopes of relief but in removing the diseased part, which remedy is more than equivocal as regards success. It was, however, suggested to me by a medical friend, that as the pyroligneous acid had proved so

valuable and efficacious in the other cases, whether it would not be worthy of a trial in a disease which has generally defied the power of remedial agents\*. I readily consented, but with no hopes of success. The acid was applied in its strongest form, which in two days checked the hæmorrhagic tendency. In fifteen days the fungous character of the wound was subdued, when lunar caustic and adhesive straps were applied, which completed the cure on the 25th of October.

During the prevalence of yellow fever in Charleston, in 1824, I gave the acid much diluted internally, during the black vomit stage, but with no benefit. I have no doubt it would prove salutary in putrid sore throats, as a gargle, and it would be worthy of trial in cancer; in neither of which have I yet used it.

I have drawn up these cases and observations from a conscientious conviction that a proper use of the pyroligneous acid will be the cause of saving to many human beings limbs which otherwise would be cut off, and with the anxious hope that its use among surgeons may become general.

Charleston, S. C. Nov. 1829.

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\* I am not aware that there is another case of cure of this dreadful malady on record.

#### BOOKS RECEIVED FOR REVIEW.

THE following books having been mislaid, were omitted in a former list:—

The Influence of Climate in the Prevention and Cure of Chronic Diseases, more particularly of the Chest and Digestive Organs. By James Clark, M.D. The Second Edition.

A Practical Essay on the Disease generally known under the denomination of Delirium Tremens. By Andrew Blake, M.D.

A Letter to William Lawrence, Esq. F.R.S. on the Nature and Causes of Intellectual Life and the Mind. By William Addison.

An Experimental Inquiry into the Laws which regulate the Phenomena of Organic and Animal Life. By G. Calvert Holland, M.D.

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#### ERRATUM.

In the reference to Mr. Liston's paper in our last No., p. 101, instead of "nineteenth volume of the Transactions of the Edinburgh Medical and Chirurgical Society," read "nineteenth volume of the *Edinburgh Medical and Surgical Journal*."

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W. WILSON, Printer, 57, Skinner-Street, London.

# THE LONDON MEDICAL GAZETTE,

BEING A

WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

SATURDAY, MAY 8, 1830.

## LECTURES ON SURGERY,

Delivered at St. Bartholomew's Hospital,

BY WILLIAM LAWRENCE, F.R.S.

— from 171.

### LECTURE XXXIX.

*Leprous Encrustations—Tubercula—Cancer of the Skin—Chimney-sweep's Cancer—Subcutaneous Tubercle—Warts—Corns—Bunyon.*

I HAVE a specimen here, gentlemen, which Mr. Langstaff has been kind enough to bring me, of a scaly encrustation formed in a leprous eruption. This is an example of that kind of mass of scaly deposit that sometimes take place in affections of this kind: it was taken from a young woman, about 20 or 21 years of age. Here the groups are aggregated into large masses; on the opposite side are exhibited what we may call young scales. Thus you see the extent to which the affection will go when no means are taken to keep the surface of the skin clear from these cutaneous encrustations.

#### *Tubercula—Cancer of the Skin.*

The skin, gentlemen, is sometimes subject to cancer, and this affection is arranged under the order *tubercula*, by the cutaneous nosologists, because cancerous disease begins in the skin with a small indurated enlargement called a tubercle. In fact, cancer of the skin goes through the same two successive changes which I have had occasion to describe to you in speaking of the affection generally. There are, in the first place, induration and enlargement, or the schirous condition; and there is subsequently the state of ulceration. All parts of the skin are not equally liable to cancer. The integuments of the face, and perhaps particularly those of the eyelids, are the most so. We occasionally see it on the external organs of generation, in both sexes; sometimes on the hands. These are the parts most commonly

the seat of cancer externally. The scrotum, in the male subject, is liable to a peculiar kind of cancer, from certain local causes which I shall have occasion to mention to you hereafter.

When cancer affects the integuments of the face in the first instance, it begins with a small induration and enlargement at a certain spot, which may be called a *tubercle*; and which the patient supposes to be a wart. It is uninfamed, and of the colour of the natural skin, and it is not particularly sensible. In this state the affection may remain for a considerable length of time, though it sooner or later ulcerates; and the ulcer which is formed on this tubercular enlargement of the skin does not penetrate very deeply—does not assume any very unfavourable appearance. It secretes a matter which forms a thin brownish encrustation over the part, and, being exposed to the air, a kind of thin skin, or crust, forms over the ulcer; and in this state the affection goes on for a long time, without the patient paying much attention to it—the tubercle not being considerable in size, and the ulceration formed on it being also of trifling magnitude. The disease, however, gradually advances, and ultimately an ulcer of considerable size is formed. In this state, we find that the margin of the sore is elevated, presenting more or less of a tubercular character, but preserving nearly the same colour with that of the sound integuments. There is no great excavation formed by the sore, and the secretion that takes place from it does not seem to possess any acrid or offensive properties; and, in fact, in this form the disease goes on without any very rapid increase or very serious alteration for a considerable number of years. It is particularly characterized by slowness of development and progress, and, in the majority of instances, it does not affect the absorbent glands in the way that cancer does when it takes place in other parts—in the female breast, for instance.

Perhaps we see this affection more fre-

quently in the eyelids than in other parts of the face. In the month of December, 1825, I removed the principal part of the lower eyelid of a gentleman, on account of this affection; and at that time the disease had already existed about five years, and even then it had not completely destroyed the whole of the inferior palpebra. It consisted of a tubercular induration of the skin. The tubercle of which this enlargement consisted, had externally the same colour and appearance as the sound skin, having over it a few red and slightly varicose vessels. The affected eyelid might be said to be about twice the natural thickness; and on the surface of this enlargement ulceration had taken place, which began at the internal angle of the eye, and had gradually eaten its way towards the external angle: it began in the exterior of the eyelid, and did not extend so much on the mucous as on the external surface. Indeed the disease seemed to be essentially an affection of the integuments of the eyelid, and not of the mucous membrane. This affection had given the gentleman no great inconvenience—had not been attended with much pain; but the sharp edge of the eyelid, where it had been ulcerated, came in contact with the globe of the eye, and had occasionally irritated it so as to produce a good deal of inconvenience. Various local applications had been tried in this case, but none of them had any effect, and I therefore extirpated the parts. To do this completely, it was necessary to take away nearly the whole of the inferior palpebra, including the inferior punctum lachrymale, and a considerable portion of the inferior lachrymal duct. The wound healed very favourably, and the gentleman now, at the distance of four years from the time of the operation, remains perfectly well; the part is quite sound, and no inconvenience has occurred in this instance from the removal of the inferior punctum.

In the course of last summer I had a patient in this hospital, about forty years of age, in whom a similar affection existed on the left side of the nose, occupying that part of the cheek which is towards the alar nasi. It consisted of an ulcer about one inch and a half in length, and about half or three quarters of an inch in breadth; the margin of which was indurated and irregularly elevated; the sore was not very deep; it had somewhat of a red surface, without any appearance of granulation, and produced a thin discharge, not in very great quantity. The ulceration in this individual had existed about six years. I extirpated the parts, and took away the whole of them, by cutting a short distance from the seat of the disease. The wound healed very favourably, and I have heard nothing of the patient since. In this instance I had

an opportunity of examining the state of the affected skin;—on comparing the depth of the ulcer with the thickness of the skin, one would have supposed that this had been entirely destroyed by the ulcerative process, because there was an elevated margin of the skin surrounding the ulcer; but when I came to make a section, I found that the texture of the skin remained at the base of the ulcer; there was, as it were, a thickened stratum of cutis. One should say, that the natural texture of the skin was rather thickened, and it formed a sort of fibrous structure shooting towards the ulcerated surface: it was the kind of skin usually presented in these cases. In this instance there was no affection of the absorbent glands. The cases that I have now mentioned to you shew that, although these complaints are called cancerous, they admit, to a certain extent, of cure. It seemed that here the affection had commenced upon the alar nasi, and a considerable part of it had been destroyed by the ulcerative process, and the part so destroyed had cicatrized; and, indeed, while the patient was in the hospital, a disposition to cicatrization seemed to prevail on the aspect of the ulcer towards the nose;—but in other parts it seemed to spread so, that there appeared little encouragement to attempt a cure by any means save that of operation.

I remember seeing an instance where this affection took place on both the eyelids—where, in fact, it destroyed the whole of both eyelids, and had extended partially into the orbit, close to the globe of the eye; which last, however, had not become affected, except through exposure to the air. The disease had here existed seventeen years; and even then the absorbent glands were not diseased.

The great advantage which is often derived from arsenical applications to that description of ulceration which I have mentioned to you under the name of lupus, has led to their use in some of these cancerous ulcers of the face, but they are not here equally efficacious; nor, in fact, is their employment equally safe; for you sometimes produce a degree of irritation in the sores which increases the mischief, and occasions the affection to spread more rapidly.

For this reason, it is necessary that you should carefully distinguish between ulcerations of the face of a cancerous character and those that belong to the head of lupus. The tubercle from which cancer commences is hard; it is uninfamed—that is, it has the same colour as the natural integument. The tubercle of lupus is softer, and of a bright red colour. The cancerous tubercle is single—that is, the affection is confined to one spot. In lupus there are generally two or more spots of skin affected. The margin of the ulceration in cancer is tuberculated; it



is hard, but retains the same colour as the surrounding integument; the ulceration generally presents a smooth red surface, and is particularly characterized by its slow progress; it does not eat deeply, nor does it destroy the parts rapidly. In lupus, the edge of the ulceration is of a bright red; the skin surrounding the sore is of the same colour; the ulcerated surface itself is generally yellow, something like the phagedenic sore, and the destructive process extends so rapidly that it will destroy the ala of the nose, or any other part, within a very short time.

We sometimes see ulceration of a cancerous nature affecting the external organs of generation in the female—affecting either a part of the integument or a part of the thinner covering which lines the external cavity of those parts, and sometimes it occupies both. It is here of importance to distinguish the affection, because such ulcers are liable to be mistaken for venereal sores, and, under this mistake, to be treated by means which are not capable of rendering any service in cases of cancer. The sore in these cases—I have not seen here any thing like tubercle—is generally deep, there is considerable excavation, it has a red appearance, like raw flesh, the margin of the sore forms a kind of sharp-cut edge, and the secretion is a thin ichor;—great pain is experienced in the part. I have generally observed, in these cases, that the glands in the groin were affected. The disease is slower in its progress than venereal ulceration, at the same time it proceeds more rapidly than cancerous ulceration seated on the face.

The only treatment that I have found of any advantage in these instances, has been the palliative or soothing; soft poultices applied to the part, opiate applications, such as the solution of opium in water, or Mr. Battley's liquor opii sedativus, and the administration of opium internally, to lull the pain.

I had lately under my care a lady who had a cancerous ulceration of this sort. It was situated in the inferior edge of the mons veneris; it was bounded below by the upper part of the clitoris and nymphæ. It had existed about two years when I first saw her, and there was an excavation large enough to hold the end of the thumb under the mons veneris. The surface of the sore was rather foul and unhealthy; there were some parts of it had a kind of sloughy appearance, presenting an ash-coloured surface. The sore had rather an irritated appearance. In truth, upon examination, I found that, for some time, a succession of stimulating and heating applications had been made to this sore, under which the lady had experienced considerable aggravation of suffering, and owing to which, probably, the

sore had got into an unhealthy state. Caustic, mercurial fumigation, and means of that kind had been applied to this sore, under the idea, probably, that it possessed something of a venereal character. When these means were laid aside, and the soothing plan was adopted, the painful state of the sore went off, and the suffering altogether was materially alleviated. In this instance, the absorbent glands of the groin on both sides were enlarged and indurated, but in other respects the lady appeared in good health. She had not lost flesh, she had a good appetite, and the other functions were well performed. She continued under my care some time, and when I last saw her she came to me apparently in good health, and looked extremely well. The ulceration, at that time, had considerably increased; the excavation was so large that it would have held a large walnut, but yet it had a tolerably clean appearance. The indurated glands of the groin on the right side had suppurated, but had not formed an external ulcer, though there were small openings like pin-holes in numerous places, through which a copious discharge issued. After some time, I was rather surprised by hearing that the lady was suddenly taken ill; I could not exactly make out in what way, but in fact she died within a fortnight of the time of my last seeing her.

I have not seen any instance of cancerous ulceration occurring about the external organs of generation of the female in which I have deemed it advisable to remove the parts by operation. In the present instance, the situation was such as would have admitted of removal provided the glands of the groin had not been affected, but the affection of those glands seemed to me entirely to preclude all idea of extirpation.

We sometimes see an affection commencing on the skin of the hand, probably deriving its origin from some of those direct irritations to which the hands are liable, proceeding to indurated ulcerations and a kind of warty state of the skin, and this going into a condition which I cannot describe by any other name except that of cancer, and in fact possessing in every respect the intractable nature and unfavourable character that belongs to that disease.

I had some time ago under my care in this hospital a patient who had an affection of this kind in the hand. He was 55 years of age. He came from Sussex, where he lived as a labourer, and he enjoyed good health. He had warts over different parts of the hand and fore arm; and one of these, which was situated on the back of the thumb, had become troublesome, and either under the care of some old woman or some practitioner—I forget which—a succession of caustic and acrid applications had been made to it, by which the part became painful, and ulti-

mately spread and extended into a very formidable disease. When he came to the hospital, he had the whole of the integuments covering the back of the first joint of the thumb and extending over the metacarpal bone of the fore finger, considerably enlarged, in a tuberculated state, inflamed, bright red, and ulcerated at various points. In this inflamed and tuberculated mass there were several ulcerative excavations going deep into the parts, and giving issue to a thin, fetid, ichorous discharge. In other parts, this enlarged substance presented merely the character of a wart, that is, an irregular rough surface, which seemed to be partly ulcerated. The margin of the diseased skin was enlarged and tuberculated, and the affection appeared to extend by the gradual sloughing and subsequent ulceration of those tubercles which formed in the circumference of the diseased parts. The character of the discharge in this instance particularly pointed out the nature of the affection: although the patient was healthy, and there was no reason why any common ulcer should not produce natural healthy pus, yet that which flowed from this sore was of a watery consistence, a light yellow appearance, and very fetid. It did not partake in any degree of the characters that belong to the discharge from healthy ulceration. There was considerable enlargement of the glands in the axilla; they formed a tumor about the size of a pigeon's egg, which was soft to the feel. When inquiry was made respecting this tumor, he said that it had existed long before the disease had assumed the appearance I have described, as presented by the thumb. This was a point, of course, that was particularly investigated, because it involved the question, whether it would be right to remove the part by amputation or not. If the swelling in the axilla had been regarded as a cancerous affection of the glands situated there, it might, perhaps, have constituted an objection to the operation; but if it were found that the disease had existed there previous to the complaint on the hand, of course it would not appear in the same light. The swelling in the axillary glands was soft; it was not hard to the feel, and therefore it was considered that possibly the account the man gave might be right, and that it had existed there longer than the disease in the hand. I had resolved upon performing the operation in this case, the complaint being decidedly cancerous; but it was suggested that some local means might be tried previous to the operation, and in fact cinnabar fumigation was mentioned. This was tried, and the effect was a great aggravation of the inflammation of the skin, and an attack of erysipelas in the hand and fore arm, which was rather serious. When that was got rid of, I amputated the hand, removing the part at the joint of the wrist,

The wound healed very well;—however, the fore arm for a length of time remained swelled, and was the subject of constant attacks of inflammation, so that it was necessary to apply leeches, and adopt various other measures; and we did not think the man in a fit state to go out of the hospital until several weeks after the performance of the operation,—which took place in July 1827. In March 1828 he returned to the hospital with a great increase of the swelling in the axilla. It had now acquired the size of a small apple; it was hard, and the integument adhered to it closely, though it was moveable on the parts on which it rested. There could now be no doubt that this was a cancerous affection of the axillary glands, and it was thought expedient to give the patient a chance of recovery by removing the disease. I accordingly extirpated the glands, which adhered so closely to the great vessels that about one inch and a half of the axillary artery was laid bare by the dissection. The parts healed up favourably, and the patient left the hospital soon after the operation. However, in no long period he returned again, and he ultimately died from a recurrence of the disease in the axilla.

You see, therefore, that although cancer of the skin may present appearances somewhat different from that which we see when it takes place in the mammary glands and in some other organs, (in fact, we should expect from the differences of texture, that cancerous disease would present some modifications,) yet that in its essential nature, and in its destructive character, so far as it regards the texture in which it is developed, and its effect on the life of the individual, it is exactly similar to that disease elsewhere.

#### *Chimney-Sweep's Cancer.*

I have mentioned that in the *scrotum* there is a peculiar cancerous disease occurring in certain individuals; the affection I allude to is, the *chimney-sweep's cancer*. This is an interesting kind of affection, because it shews that a malignant disease, in all its principal features very closely resembling cancer, may be produced in persons, otherwise healthy, simply by local irritation; for chimney-sweep's cancer is the direct result of the irritation of soot lodging in the rugæ of the *scrotum*. This affection, however, does not occur in what are commonly called "climbing boys,"—it is not in children who commonly perform the office of cleaning chimneys; it takes place in adults,—those adults who, in following this avocation, have their skin as much in contact with and as much liable to be irritated by soot as climbing children. It is very uncommon, and perhaps there is hardly an instance known, of the affection occurring before the age of pu-

berty, and indeed it very rarely occurs under the age of thirty. The disease commences in the scrotum by the formation of an indurated enlargement of the integuments, like a wart, and which in common language, and usually by persons who follow that calling, is denominated a *soot wart*. There is tubercular enlargement and induration of a portion of the integument of the scrotum. In this state the disease often remains for a considerable length of time. The cuticle may be separated, and a little exudation may take place from the part, and form an encrustation upon the surface of the wart, which may be picked off or removed accidentally. However, sooner or later this part ulcerates, the principal characters of the ulceration corresponding to those of cancerous disease, that is, there is a deep excavation, a thickened base, thickened edges, and very commonly an elevated and everted margin, while the ulceration thus produced gives rise to a very copious and fœtid ichorous discharge. Sometimes the affection consists not so much of a state of ulceration as in a warty, or rather a fungoid excrescence, of the affected part,—what we should call a soft vascular kind of wart, which produces the same kind of offensive ichorous discharge as the ulcer. Whether the affection take place in one or other of these forms, it will extend over the whole scrotum, and gradually pass to the perineum. After it has lasted for a certain time, it will become extended to the testes, and the glands in the groin will become enlarged and indurated, and, if the disease go on, will pass into a state of ulceration. The affection is attended with very severe pain; and in that respect it resembles other cancerous diseases. The persons in whom it occurs generally exhibit marks of an unhealthy constitution: they are thin and emaciated, and they have a peculiarly dark, sallow, and earthy appearance of the skin; and it has been often observed that the cutaneous perspiration generally has a very offensive smell. The progress of this disease, by its local effects, and the serious influence it produces on the constitution, ultimately destroys the individual. I am not aware, however, whether in this, as in many other forms of cancer, the internal organs of the body become affected. There is a short account of the disease, published by Mr. Pott, in which, however, he does not advert to this circumstance at all.

No local remedies, and no internal medicines, have any effect whatever in arresting this complaint. In that respect it corresponds with cancer generally. Local remedies may soothe: the application of opium, for example, may lessen the pain, and other applications may diminish or relieve the fœtor of the discharge; but I am fain to confess to you that we have not the power, either by internal medicines or local applica-

tions, to prevent the destructive progress of the disease, although we may relieve or lessen particular symptoms by internal or external means. In fact, the only effectual mode of treatment in these cases is extirpation; and whenever the disease can be completely removed—whenever we can carry the incision beyond the parts actually affected, so as to cut into parts sound in their structure, we may remove the disease with great confidence in the efficacy of the proceeding. If we leave behind any parts that have become indurated, and still more any parts that have become ulcerated, we cannot be surprised if the disease should re-appear. But if the disease be so circumstanced that we can take away all the parts indurated or ulcerated, so that we can carry the incision into parts completely sound, then the operation of extirpation is a complete, a safe, and an effectual remedy. It does not matter how far the disease may have extended in the integuments: if, for instance, it should involve all the integuments of the scrotum or perineum, we may freely take away the part; for although we may denude the testes and the penis, yet the surrounding integuments are drawn together when cicatrization takes place, so as to cover up the parts that have been thus exposed.

It may be a question how far the operation ought to be performed if the testis be involved in the disease. Now it appears to me that the disease does not readily spread to the testes;—at least you find the cellular membrane, intervening between the ulceration and the testicles, so far thickened, that you cannot move it on them; so that you might judge that they were involved in the disease; and yet you find in such instances that the testes, though apparently implicated, are perfectly sound. I remember an instance in which I took out both testes, the spermatic cords being healthy; they were completely imbedded in the affection of the scrotum; but when the testes came to be cut into, they proved to be quite sound. The mere circumstance of the diseased parts adhering to the testes, and seeming to involve them, would not, in my mind, be a reason against the operation. The disease is so necessarily fatal if left to itself, that even in a doubtful case I should rather have recourse to the operation than leave untried what affords at least a chance of success.

A more important question in my opinion is, how far the operation may be advisable or justifiable when the glands of the groin become diseased? There is a paper in the twelfth volume of the *Medico-Chirurgical Transactions*, by Mr. Earle, on the subject of this affection; and he there says that the swelling of the glands of the groin will subside after the disease has been removed by operation; so that the mere existence of swelling in those glands is not to be deemed



a sufficient reason against its performance. I have seen this take place in the way that Mr. Earle has described—that is, I have seen the disease removed when the glands have been swelled, and the swelling of the glands has subsequently subsided. I should, however, make this distinction—if the glands are swelled without being indurated, I think the operation may be performed; but if the glands be hardened as well as swelled, I should then doubt the propriety of operating; of course if ulceration has taken place in the glands, I should regard that as a conclusive reason against the operation,

#### *Subcutaneous Tubercle.*

There is an affection which I ought to have mentioned to you when speaking of the diseases of the cellular system; it is the formation of a small tumor immediately under the skin, upon the cellular membrane, just under the cutis—a tumor which has been noticed incidentally by various writers, but which, I believe, has only been expressly treated of and described by Mr. Wood, of Edinburgh, who, in the Edinburgh Medical Journal for the year 1812, described this affection under the head of painful subcutaneous tubercle; and who, in the third volume of the Edinburgh Medical Transactions, which has lately been published, has described it more at large. It is a small hard tumor—so small, that in general it does not produce a conspicuous external appearance. It is seated immediately under the skin, is loosely connected to it and the surrounding parts, and over which the skin itself can generally be moved. The principal character of it is the severe pain which accompanies it, and from which Mr. Wood has called it the *painful subcutaneous tubercle*. This pain, however, is not a constant attendant on the swelling—it generally takes place in paroxysms, and these are so severe, that one would almost compare the pain to that felt by persons labouring under *tic-douloureux*. The patient complains frequently that the pain is of the most intolerable and insupportable kind: it will attack him in the night, awake him, and destroy his rest; and yet perhaps at other times he experiences no inconvenience. These small subcutaneous tubercles are the seat of similar attacks of pain when they are struck or hurt; at the same time, even for weeks, and even months together, the patient experiences no kind of inconvenience from them. They last for a great length of time without acquiring any great magnitude, seldom extending in size beyond a pea or a horse bean; and Mr. Wood mentions one case in which the disease had existed thirty years, the tumor being situated at the anterior part of the ankle, and it had then acquired only the size of a horse bean. When these tumors are examined, if you

make a section, the structure appears to approximate a good deal to cartilage, but is not quite so hard;—it is a kind of bony structure, of such firmness that it makes a kind of noise when you cut through it with a knife. It has been suspected that they are developed in, or connected with, the twigs of sub-cutaneous nerves; and the author of a recent anatomical work mentions expressly the same thing. Tubercles of this character are found occasionally connected with the twigs of nerves, and in some instances they may be actually developed in such; however, in the majority of instances, I do not know that this nervous origin has been traced, so that I cannot exactly say that this is a form of disease belonging to the nervous structure. There is only one mode of procedure with this affection—we must cut it out; the operation is safe, perfectly easy, and perfectly effectual.

#### *Warts.*

*Warts* consist of an enlargement of a portion of the texture of the skin, without inflammation, and accompanied with thickening and induration of the cuticular covering. I have already had occasion to speak of those warts that are formed on the external organs of generation of both sexes, in consequence of venereal sores; but what I am now alluding to is, warts that appear on other parts of the body, and which come without any obvious cause—on the hands particularly. They are often seen in young subjects; they exist in very considerable number, and they will disappear about the time of puberty, without any particular application or obvious cause. When they are so situated as not to produce any particular inconvenience, and not to occasion any deformity, they may be safely left to themselves. They sometimes, however, are so seated about the hands or fingers, as to interfere with some motion of the part, or some office to which those parts are applied; and they often occasion an unpleasant appearance, so that people are desirous of getting rid of them, and there is no great difficulty in accomplishing this.

Perhaps the simplest and the shortest way of proceeding is to cut off the thickened cuticle which covers the prominent part of the wart—shave it in successive layers till you come to the surface of the skin, and then you perhaps draw blood in two or three places. When you have thus denuded the surface of the skin itself, you then rub the part thoroughly with nitrate of silver, and one effective application of this kind will generally destroy the wart. If, however, it should not succeed, you cut off the part thus rubbed by the caustic, and renew the application again; or you apply acetic acid in the same way to the part. If you wish immediately to extirpate it, you can make

an incision on each side, cutting it off at the base. You may proceed to this mode if necessary, but I believe you will generally find lunar caustic quite sufficient to answer your purpose.

#### Corns.

*Corns* are affections of the skin, arising from inflammation of some portion of the cutis of the toes or the feet, in consequence of pressure from the covering upon those parts. This inflammation being attended with an unnatural secretion of cuticle on the part, a continuance of the irritation produces a continued growth of the cuticle, so that ultimately a firm, hard, horny substance is formed on the part in question, and this, by its pressure, increases the inflammation of the skin, and brings on a state of the part attended with very great inconvenience, and indeed a great deal of suffering to the patient. The skin originally is preternaturally sensitive, in consequence of irritation from the friction of the shoe; then on this preternaturally sensitive skin you get a hard or horny substance, which is pressed upon by the shoe or boot, and causes great inconvenience. In some individuals a great number of the toes on both feet—in fact, all the prominent parts, are affected by growths of this kind; and if these individuals persist in wearing shoes that are tight, they suffer a great deal of pain. This pain and inconvenience are felt more particularly at certain times of the year—those hot periods of the season when the feet naturally become heated in common with the other parts of the body, in consequence of the high temperature of the atmosphere.

The palliative cure of corns, as we may call it, consists in cutting away the indurated cuticle, so as to remove from the inflamed skin, at all events, this mechanical source of irritation. The feet are first soaked in warm water, so as to moisten the indurated cuticle; you then take a sharp knife and cut away the morbid cuticle which has accumulated over the inflamed parts of the skin. In doing this, after you have removed the inflamed part, you generally come to a sort of point, where the cuticle seems to extend deeper than at the other parts; indeed it appears as if at one point the disease extended farther into the skin than elsewhere, and this has been commonly called the *root* of the corn. It is said that you may lift up and take away in a mass that part of the hardened cuticle which is thus formed in the corn; but I apprehend it is not very easy to do this. However, if you cut away the thickened cuticle in this manner, and cover the part with soap plaster, or some other mild plaster, spread on leather, and direct the patient to wear shoes that produce no pressure, great relief is experienced. You find that usually the covering of the cuticle

re-forms after this operation; but if the patient avoids the external source of irritation, the corn will not become seriously troublesome. If, however, considerable inconvenience be still experienced, you may proceed to further measures for the more effectual relief of the case—that is, after shaving away all the thickened part of the cuticle—you may rub the skin with lunar caustic. Thus you diminish the inflamed and irritable state of the skin, and then perhaps have no re-formation of the corn, if you avoid the external exciting cause; at all events the patient will derive very great alleviation from this simple process.

#### Bunyon.

There is an affection somewhat allied to, and in fact often actually connected with corns, which, however, in some respects is different from them. It is that kind of swelling which is called *bunyon*. This forms on the prominent joint of the great toe, that is, the joint between the first metatarsal bone and the first bone of the toe, a part of the foot particularly prominent, and thus particularly liable to pressure from the boot or shoe. The swelling thus formed is larger, and generally attended with more redness of the skin and tumefaction, than we see in corn; but besides there is often a hardened and thickened state of the cuticle over the most prominent part of the swelling, which constitutes bunyon. I believe the swelling of bunyon itself consists of inflammation of a bursa mucosa, which is seated between the skin and the prominent part of the joint in question;—a bursa mucosa in a situation which is analogous to that of the patella or olecranon, and by the irritation of the bursa from the pressure of the boot or shoe, a state of inflammation arises with effusion into it. If you open this swelling, you find generally that a fluid escapes. When this is in a state of inflammation, you may adopt the same means that you would do in cases of inflammation of other bursæ—leeches, poultices, lotions, or cold applications. Now the prominent part of the skin is liable to become the seat of corn, and I believe in many instances the irritation thus produced is the cause of the inflammation of the bursa. Sometimes the inflammation of the bursa becomes so considerable that a formation of matter takes place—abscess occurs, and the matter makes it escape externally. If a corn form in this situation, you must adopt the means I have already described to you, and so far as the inflammation itself goes, you have only to adopt the usual antiphlogistic means, and afterwards take measures to protect the part which is the seat of disease from the pressure of the shoe or boot.

## PHYSIOLOGY.

BY HARDWICKE SHUTE, M.D.

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[Continued from page 44.]

*On the non-existence of "Sensibility,"  
so called, and on the identity of "Irritability" in all Structures.*

HAVING endeavoured to shew that the animal properties denominated irritability and sensibility are the same in origin; that muscular fibre and nervous matter derive their capacity of being excited to action by an appropriate stimulus from the same source, as far as the existence and continuance of these properties are connected with the respiratory changes of the blood; we have next to inquire how far the existence and continuance of these properties, as connected with the function of nervous matter, lead to the same conclusion.

Is it not distinctly admitted by physiologists that the nervous influence is a cause of both of these properties; that "the nervous fluids contributing to sensibility and irritability, are often disturbed in their regularity of action;" that "if we tie, divide, or merely compress a nerve of any kind, the muscle with which it communicates becomes almost immediately paralytic; but upon untying or removing the compression, the muscle recovers its appropriate feeling and irritability;" that sensibility is a property of the nerves, and that "we cannot remove the nerves without destroying the irritable substance." If the irritability and sensibility of animal matter are equally suspended by the interruption, and equally restored by the supply of the nervous influence, it is clear that the phenomena connected with the dependance of these properties on the function of nervous matter, not only do not invalidate, but strongly corroborate the proposition, that muscular fibre and nervous matter derive their capacity of action from the same source. Are these properties the same in cause and effect?

We have hitherto spoken of sensibility as though it were simply the term by which physiologists express the capacity which nervous matter possesses of being excited into its appropriate action by its appropriate stimulus; and so

long as this interpretation is adhered to, we recognise in animal matter the property of sensibility. But there is, in our opinion, no animal property answering to the sensibility of modern physiologists—no property of living animal matter which corresponds with the modern definition of sensibility. "All the nervous functions," it is said, "are generally supposed to spring from one great property, which is denominated sensibility: by this word physiologists express—first, the power which the nervous system possesses of receiving and transmitting impressions, and producing corresponding changes in the sensorium." Now we have some difficulty in understanding what is here meant by the capacity of receiving an impression; but how an impression can be transmitted, we are wholly at a loss to conceive. An impression, according to its literal meaning, is a stamp, mark, or print, and implies the yielding of one body to the impulse of another; but how such stamp, mark, or print, can be transmitted, or what precise idea is intended to be conveyed by the expression, we are unable to determine. The effect of the impulse by which the impression is made—such, for example, as the vibration of the particles of the body to which the impulse is applied, may be transmitted; and the action of a nerve, resulting from the impulse of a material object, may, we conceive, be transmitted from one extremity of the nerve to the other; but this interpretation we are scarcely at liberty to adopt, since we are expressly told, that when an impression is made upon a nerve, "there is no motion or visible change, but the animal feels;" implying, as it would appear, that no motion takes place. Are we not speaking of a living nerve? Is it not the specific character of living matter to be excited to action (which necessarily implies motion) by the impulse of its appropriate stimulus? If it be contended that the impression upon the nerve does not, in ordinary cases of sensation, lead to a corresponding action in the nerve, it follows that the nerve is considered to be inanimate, and we are at once carried back to our original proposition, that there is no property of living animal matter which corresponds with the modern definition of sensibility.

If we look to the succeeding part of



the definition, namely, the power of a nerve to produce corresponding changes in the sensorium, we may perhaps arrive at something like a definite idea of what is meant by the transmission of an impression. When the appropriate power of the nerve is excited, an impression, it may be said, is made upon the extremity which constitutes the organ of sense, and immediately a similar impression is made upon that portion of the brain or spinal marrow which corresponds with the other extremity of the nerve; and as this change in the brain or spinal marrow takes place through the medium of the nerve, we express the fact by saying that the impression is transnitted. But the corresponding change in the brain or spinal marrow is, as we shall have occasion to shew, wholly imaginary; and if such be the case, it follows that the property of sensibility—that is to say, the power which nervous matter is considered to possess of transmitting an impression—rests upon no other evidence than the imagination of the physiologist. The phenomena of sensation, it will be said, justify the inference that this change does actually take place in that extremity of the nerve which constitutes the organ of sense, and through the medium of the nerve in the sensorium; and therefore justify the inference that nervous matter is endowed with the capacity of receiving and transmitting impressions, and of producing corresponding changes in the sensorium. Now it might easily be shewn that the phenomena of sensation, frequently termed perception, are wholly unconnected with the subject; inasmuch as we are expressly told that “it is no necessary part of this sensibility for these impressions to be perceived by the mind, or to become perceptions.” “It is,” says another physiologist, “essential to notice, that these two operations are not necessarily connected together; or, in other words, that it is no necessary part of this sensibility for the impressions to be perceived by the mind.” This point will, however, be more fully considered when we come to treat of the modification of this property, which has been denominated organic sensibility; and we shall, therefore, on the present occasion, confine ourselves to those facts which first suggested the existence of this property, and from which alone that part of the definition

which connects this property with the transmission of impressions, and the production of corresponding changes in the sensorium, has been inferred.

If we tie, divide, or compress a nerve selected for the experiment, an impression made upon the extremity of that nerve does not lead to sensation. Why? Because, says the physiologist, the transmission of the impression to the brain is interrupted. We do not of course suspend the capacity of receiving an impression in a mechanical sense, but if the expression be thus interpreted, sensibility is no longer the property of living animal matter, since every part of a living animal has, we are told, its peculiar function, to the performance of which it is excited by an appropriate stimulus. “The word function implies action, and action is, in all other instances, admitted to be the result of an impression.” “Its susceptibility of the impression of such stimulus is denominated its irritability.” Are we not distinctly told, that “every operation of the vital energy is called an action?” But it is equally a physiological axiom, that “the vital functions depend on the organization of the parts in which they reside. A power which can exist independently of the peculiar organization of the part in which it resides, is not a vital power.” Action, therefore, is the necessary consequence of an impression made upon a nerve whose organization is perfect; but does it, therefore, follow that action will take place in a nerve, the integrity of whose organization has been destroyed? If the integrity of the animal organization be necessary to the existence of a living action, it follows as a necessary inference that no living action can take place when the organization is imperfect. Now it cannot be contended that the organization of a living nerve is unimpaired by its compression or division; and therefore it cannot be contended that, when sensation is interrupted by dividing, tying, or otherwise compressing a nerve, an impression upon the extremity of that nerve does not lead to sensation, because the transmission of the impression, that is to say of the living action resulting from the impression, is interrupted. We have not only no evidence that a living action takes place in the extremity of the nerve under these circumstances, but cannot even presume the existence of such action, because such presump-

tion is in direct contradiction to the physiological axiom, that "the vital functions depend on the organization of the parts in which they reside. Can a healthy action be supposed to take place in the extremity of a diseased nerve? If there is no action, or if no healthy action takes place, it is clear that the change in the state of the nerve, which, under ordinary circumstances, leads to sensation, does not occur; and it is, therefore, a false inference that sensation does not take place when a nerve is divided, because the transmission of that change which, under other circumstances lead to sensation, is interrupted. It is proved by the experiment that communication between the extremity of the nerve and the brain is essential to perception, but the acknowledged necessity of such communication still leaves the question undetermined, whether the action of the extremity of the nerve be dependant on the brain, or the supposed action of the brain on its communication with the extremity of the nerve. Physiologists, it may be said, are at liberty to adopt either explanation, but this we deny, because the dependance of the action of the extremity of the nerve on the brain is satisfactorily and unquestionably proved by all those circumstances which connect the action of muscular fibre with the brain through the medium of an appropriate nerve; whilst the dependance of the action of the brain on the extremity of the nerve is not only unsupported by experiment or observation, but involves the physiological contradiction of attributing different functions to the same structure. Is it rational to adopt such an explanation in preference to that which reconciles the phenomena in question with the acknowledged and uniform operation of nervous matter?

If a nerve be divided, an impression made upon that extremity of the nerve which still communicates with the brain will, it is said, lead to sensation. Now it is not quite clear that, under the circumstances mentioned, the impression is not made upon the extremity of another nerve, of a nerve which terminates naturally at the point where the impression is made, and which is, therefore, perfect in its structure. "Changes produced on the coats of the nerves, cannot," says Dr. Monro, "miss to affect the nervous febriles. The cellular substance may be too full of liquor, or may

not supply enough; the liquor may not be of due consistence, or it may be preternaturally obstructed and collected. The pia, or dura mater, may be too tense or too lax; their vessels may be obstructed; their proper nerves may be irritated, or lose their power of acting." Admitting, however, that the nerve which has been divided is the identical nerve in which, under the circumstances mentioned, the sensation originates, the fact only proves that communication with the brain is essential to perception; still leaving the question undetermined, whether the sensation takes place in consequence of the brain supporting the action of the extremity of the nerve, or of the action of the extremity of the nerve leading to a corresponding change in the sensorium. We are of opinion, therefore, that there is no satisfactory evidence of any nerve being endowed with the capacity of transmitting an impression, and have next to inquire how far the power which a nerve is said to possess of producing corresponding changes in the sensorium, has been legitimately inferred from the phenomena of sensation.

"The proof of the existence of a common sensorium depends," says Dr. Bostock, "upon the facts which have been referred to above, where impressions made on an organ of sense are not followed by a perception, provided the nervous communication between the organ and the brain be destroyed or injured." Now this fact, as we have endeavoured to shew, only justifies the inference, that a communication between the extremity of the nerve and the brain, we might say between the brain and the extremity of the nerve, is essential to sensation; but the explanation of the fact is equally intelligible, whether we attribute the loss of sensation to the absence of that change in the extremity of the nerve which constitutes the first link in the animal process of sensation, or to the want of that change in the sensorium which is imagined to be the result of an impression made upon an organ of sense, and to be more immediately connected with the operation of the mind. Now we adopt the former opinion, because it involves no peculiar views of living action, the change in the state of the nerve being the natural and ordinary result of an impression made upon living animal matter, because it does not call upon us to

imagine that an injured nerve retains its power of action unimpaired; because it does not require for its support the irrational hypothesis that the same structure, the same as far as such structure is cognizable by our senses, is endowed with properties so different, as that of conveying a material substance from the brain to the extremity of a nerve, and of transmitting an impression from the extremity of a nerve to the brain; because it does not call upon us to sacrifice that which we know, and which cannot rationally be denied, to that which we do not know, and rests upon no other evidence than the prolific imagination of the physiologist.

"The same conclusion," continues the author before mentioned, "seems to be confirmed by a series of facts the reverse of these; where, when an effect has been produced on the brain, similar as we may suppose to one which had on some former occasion been transmitted to it from an organ of sense, it has excited the idea of an external impression, although the organ of sense may have been destroyed. This is the case with persons who, after having arrived at maturity, have had the eyes entirely destroyed; yet such persons continue to dream of visible objects, and are able to recal visible ideas with perfect facility!" This is, indeed, a singular argument. The supposition of a change taking place in the sensorium in ordinary cases of sensation is confirmed, not by the fact, but by the supposition, that an idea arises from a similar change in the sensorium, which supposition rests upon no other evidence than the original supposition, that a change does take place in the sensorium in ordinary cases of sensation. The fact simply proves that an idea is not dependent on a change in the organ of sense, and thus distinctly proves that an idea and a sensation are not physiologically the same, a change in the organ of sense being under all circumstances essential to the existence of a sensation. An idea, it may be said, is nothing more than a recalled sensation,—is, in fact, the original sensation not at all altered by the circumstance of its being recalled, and, therefore, the original and the recalled sensation must be supposed to be dependent on the same cause. This cause, in the example of a recalled sensation when the organ of sense has been destroyed, is obviously not dependent on

a change in the organ of sense, and it therefore follows that the original sensation must have been dependent on some other cause than the change mentioned. Now if it can be shewn that an idea is not a recalled sensation—that an idea is distinguished from a sensation by the very circumstance of its not being dependent on a corresponding change in nervous matter, it will follow that physiologists reason upon false premises when their argument is founded upon the assumed fact, that an idea is referrible to "an effect produced on the brain similar to one which had on some former occasion been transmitted to it from an organ of sense." If two individuals look at a distant object, the impression upon the retina of each must, *ceteris paribus*, be the same, and yet the idea is not always the same, because the object is pronounced by the one to be a horse, and by the other a tree. How can an idea be the representative of a change in the organ of sense, or of a corresponding change in the sensorium, if two individuals have different ideas of an object, which causes the same change in the retina and in the sensorium of each? An impression upon an organ of sense leads, we are told, to a corresponding change in the sensorium, and if such be the fact, it is obvious that, in the example mentioned, the idea is not in both instances correspondent with the change which actually takes place in the sensorium. But an idea differs from a sensation in its capacity of representing that which is immaterial, and therefore incapable of making an impression on nervous matter. For example:—"To judge," says Magendie, "is to establish a relation between two ideas, or between two groups of ideas. When I judge of the goodness of a work, I feel that the idea of goodness belongs to the book." Now the goodness, the quality of a book, cannot possibly make an impression on nervous matter, and yet it is here distinctly admitted that such quality gives rise to a corresponding idea. There are certain external characters of the human body which suggest the idea of a person having lived a certain number of days, months, or years; we connect with these characters the idea of a certain period of time having elapsed since the birth of the individual, and this period of time we denominate age. Now the lapse of



time cannot possibly be supposed to lead to a corresponding change in nervous matter, and yet we have a distinct idea of the lapse of time. We are conscious of our own existence, that is to say, have a distinct idea of the fact that we exist, and yet the fact of our existence cannot be supposed to produce a corresponding change in nervous matter. We have a distinct idea of an Almighty Power which rules the universe, but how such power can produce a corresponding change in nervous matter, we have still to learn. We have thus, in the examples mentioned, a distinct idea of that which is incapable of making a corresponding impression on nervous matter, whilst the definition of a sensation necessarily and always implies a change in nervous matter resulting from the impression of a material object. The argument which rests upon the assumed identity of a sensation and an idea is, therefore, physiologically incorrect, inasmuch as the former is the immediate effect of an impression on nervous matter resulting from the impulse of a material object, whilst the latter is often, if not always, the representative of that which is immaterial, and therefore incapable of making an impression on nervous matter. The fact of the sensation of a visible object being connected with a change in the organ of vision is, therefore, no argument in favour of the supposition, that the idea of such object is connected with a change in the sensorium; and if there be no reason to suppose that the idea of a visible object is connected with a corresponding change in the sensorium, the fact of such idea occurring independently of a change in the organ of sense, is no argument in favour of the supposition, that the sensation of a visible object is connected with a corresponding change in the sensorium.

"It is," continues the same author, "partly also upon the principle of the actions of the brain producing effects similar to those that follow from impressions upon the extremities of the nerves, that we account for the mistaken perceptions that are experienced after the loss of a limb, which are frequently not to be distinguished from those that formerly existed in the part." The argument is obviously founded on the assumed identity, as far as the brain is concerned, of the original sensation and the subsequent idea, but with this

important and additional fact, that the idea is obviously the representative of a similarity between the original and the present sensation, and is thus the representative of that, which is incapable of making an impression on nervous matter.

We are not aware of any other argument which has been advanced in support of the existence of a sensorium commune, except that which arises from the suspended or impaired sensation which often results from diseases or injuries of the brain. "It is, therefore," says Baron Haller, "a false position that the mind perceives immediately in the nervous branches or sensible organs themselves; for this opinion is confuted by the pains which a person will feel in a limb after it has been cut off, and from the interruption or removal of all pain by a compressure of the conveying nerve, with the disorders of the senses from different affections of the brain." Now it cannot be denied that the action of the mind—that is to say, the exercise of the perceptive powers—is dependant on the functions of the brain; and it is therefore obvious that, consistently with our former observations, the loss of sensation in apoplexy, epilepsy, syncope, and injuries of the brain, is not necessarily referrible to the fact of no corresponding change taking place in the sensorium, since the loss of sensation under these circumstances is as obviously referrible to the facts of the impressions on the organ of sense not leading to the necessary change in that organ, in consequence of the dependence of that organ on the brain; or of the perceptive powers, in consequence of their dependence on the brain, not being in a state to perceive the change, supposing it to take place.

It has been ascertained, by an accurate examination of the spinal nerves, that they consist of distinct filaments, arising from the anterior and posterior portions of the spinal marrow; and by tracing these filaments from their different origins to their different destinations, it has been found that the anterior filaments are nerves of motion—that is to say, terminate in the muscular fibre—whilst the posterior filaments may be traced into "the skin of the neck, trunk, and members;" and have been denominated nerves of sensation. We shall endeavour, in a future part of

these observations, to shew that the phenomena of motion and of sensation, as connected with the different nerves, are not irreconcilable with the proposition that the function of these nerves is the same; the difference of effect being referrible, not to the nerves, but to the organs and perceptive powers with which they are connected. It is sufficient for our present purpose to say, that when the changes in the state of the skin, or of the nerves supplying the skin, are observed by the animal, and become perceptions, it does not follow, from the circumstance of these nerves originating in, or being connected with, the posterior portion of the spinal marrow, that these actions are observed and become perceptions because they are transmitted to the sensorium. If the retrograde action of these nerves cannot be legitimately inferred from the phenomena of sensation (and we have given our reasons for entertaining that opinion), there is nothing in the fact of these nerves being connected with the posterior portion of the spinal marrow from which such retrograde action can be inferred. We are, indeed, disposed to believe that their origin in the posterior portion of the spinal marrow is referrible to the simple circumstance of such origin being the most convenient for their distribution; inasmuch as they are thus enabled to arrive at their destination—namely, the exterior part of the body—without crossing or interfering with those nervous fibrils which originate in the anterior portion of the spinal marrow, and are distributed to the more internal parts of the body—namely, the muscles. It has also been ascertained that an animal does not express pain when the portio dura of the seventh nerve (a nerve of motion) is pinched, torn, or otherwise injured; whilst considerable pain is apparently felt when the portio mollis of that nerve, or “the upper branch of the fifth pair, which gives sensibility to the skin or mucous membranes of all the anterior part of the head,” are subjected to similar causes of irritation. But the fact of the animal perceiving the change in the state of particular nerves only, does not justify the inference that the one change is perceived because it does, and the other unperceived because it does not, produce a corresponding change in the sensorium. The facts of these nerves being different in their origins and desti-

nations, or of the actions of one of these classes of nerves only being perceived by the animal, do not in any way impugn the propositions—that there is no animal property corresponding with the modern definition of sensibility, and that the irritability of animal matter is in all structures the same.

## REMARKS

UPON

BOTANY AND INSTITUTIONS OF  
MEDICINE,*As constituting a Part of Medical Education.*

BY WILLIAM HOWISON, M.D.

Lecturer on Materia Medica, Botany, &amp;c.

AN individual unconnected with the medical profession (but much more so a medical man), upon carefully perusing our Edinburgh Medical and Surgical Regulations for the education of young men, will naturally ask—Is a knowledge of botany essential to the practitioner? If it be, and no sensible man will give him any other answer, the University of Edinburgh (and every other University) in their Statuta Solemnia, do right in making it form an essential part of the education for acquiring the degree of Doctor of Medicine. The next question which will naturally occur is, why do the College of Surgeons and Apothecaries of the same celebrated school of medicine (the only acknowledged body of apothecaries in Edinburgh) omit such an important branch from the regulations for their diploma, or liberty to practise? Does a physician, the prescriber, require a knowledge of botany; and is a similar knowledge unnecessary to the apothecary, who makes up his prescription? Are they of opinion that a proper knowledge of materia medica can be acquired by an individual completely ignorant of botany? The answer of these questions I leave to the majority of that learned body. They prefer the elements of mathematics and mechanical philosophy to botany, or medical jurisprudence. The education, however, of the Edinburgh College of Surgeons will not be complete until botany is added to the course of their study.

The Apothecaries' Company of London, in their last regulations, have omitted the word medical (their former regulations including one course of *materia medica* and *medical botany*), and have now included two courses of *materia medica* and botany. Would it not have been more proper and scientific for them to have separated botany from *materia medica* entirely; and to have said, one course of *materia medica* and one course of botany (the same in reality, so far as regards time and expense to the student)? Are they averse to follow, or have they not seen, the example of Sir James M'Grigor, in the excellent regulations of the Army Medical Board, for so many years looking them in the face? Would the Navy Medical Board not do well in adding a three months' course of botany in their regulations?

Botany and *materia medica* ought to be separate and distinct courses. They can never be properly taught together. Botany cannot be taught with propriety during the winter season, which is the time at which the greatest justice can be done to *materia medica*. Why do the London regulations not combine pharmacy with *materia medica*, in place of botany; as is done in Scotland? Are the two not most intimately allied together? Why do they not even mention pharmacy? Is it not of as much consequence to the physician, surgeon, and apothecary, as *materia medica*? Does not the London Pharmacopœia consist one half of pharmacy and one half of *materia medica*?

Combining *materia medica* and botany in one course, as is at present done in the regulations of the Royal College of Surgeons and Apothecaries' Company of London, and which teachers are compelled to act up to, to make their tickets qualify, is most improper. The botany is superficially taught, if taught at all; and men are forced to come forward—viz. teachers of *materia medica*,—to make it known to others who have never given it their practical attention, and who are ignorant of it themselves. Botany is not the superficial study which men ignorant of its minutiae are apt to suppose. It is only to be acquired by industry, labour, the toil of summers in the fields, aided by a natural genius or attachment for its study. If Linnæus, Sir James Smith (men whose lives were totally oc-

cupied in its pursuit), and many other individuals now existing, were to be asked how botany ought to be taught? their answer would never have been in conjunction with *materia medica*, or by individuals forced into its service. By the periodical journals of the day, I am happy to see that Botanical Gardens and Societies are now set a going in London, by Mr. Frost and others; and certainly the public, and medical profession in particular, are called upon to encourage such labours. It may be unnecessary for me to add, that botany ought to be taught to medical students by medical practitioners in active practice, and by no other individuals.

It is a mistaken idea, although a very prevalent one, that general botany can no where be properly taught without a botanic garden. Such may be the case in London, or in over-grown cities. In Edinburgh it can be taught with perfect advantage, independent of such a garden. Arthur's Seat, and Salisbury Crags, close to the town, abound in a constant and ever varying supply of plants. Blackford, Braid, and the Pentland Hills, with alpine plants; Duddingstone and Lochend with water plants; the coasts of the Firth of Forth with marine plants; and the surrounding level country with those of the plains;—all wild, in the state of nature, unaffected by cultivation, as those in botanic gardens are, and in the only suitable state for teaching botany. Even our University Professor throws aside to a considerable extent the superb Botanic Garden at his command, and avails himself of the above-mentioned resources, employing his gardeners during most of the summer in collecting the plants then growing. Excursions in such a neighbourhood afford an entertaining, healthful, and an advantageous addition to a course of botanical lectures.

Every medical man ought to know general botany, as an interesting and beneficial part of his profession, and he can only acquire that knowledge by attending diligently and attentively one or more courses of botany of three months' duration. Every medical officer entering the army, navy, or East India service, where he possesses ample opportunities of moving from place to place over the earth's surface, ought to know intimately botany, as putting it in his power to benefit the human race, and



to employ his spare hours to advantage. The carrying this improvement into effect, lies with the different medical bodies, the Army, Navy, and India Medical Boards, to insist upon every student attending a course of botany, with botanical excursions of at least three months' duration, previous to getting his diploma, or being allowed to enter the public service of his country.

#### *Institutions or Theory of Medicine.*

Institutions of medicine have from time immemorial been a distinct and separate class in the Edinburgh, Glasgow, and Dublin Universities, and with propriety. The only error the new London University has committed is in substituting an imperfect course of physiology, consisting of only three lectures a week for three months, for the more perfect one of institutions of medicine, consisting of five lectures a week for five months.

The Royal College of Surgeons of Edinburgh, in their last Regulations, have improperly termed this class institutions of medicine or physiology, in place of theory of medicine; whereas it consists of five lectures weekly for above five months, and must embrace physiology, therapeutics, and even pathology, history of medicine, &c. to fill up so much time.

Is there any course on the institutions of medicine given in London? The Navy Medical Board require their candidates to attend twelve months theory and twelve months practice of medicine. Do they mean that the candidate shall attend two six-months courses of theory or institutions of medicine, and two six-months courses of practice of medicine, which can only be got in Edinburgh, and which is most proper; or, that he should attend twenty-four months of theory and practice embraced together as taught in London? *viz.* eight distinct courses of three months' duration? Monstrous! Or will either of these answer the purpose? If any individual employed in the teaching of medicine will think it worth his time to answer one or all of the queries contained in the preceding paragraphs, he will oblige their author.

#### *Application of Flour to Leech-bites.*

As a postscript to the foregoing paper, allow me to recommend to the

medical profession a thick layer of wheat flour dusted upon flannel, as a rapid and efficacious means of stopping the hæmorrhage from leech bites. I now use this on every occasion, and have found it far superior to powdered loaf sugar, nitrate of silver, caddis, or any other means which I have heard proposed. It is particularly cleanly, preventing the clothes of the individual from being drenched with blood during the night, or when in bed.

#### *Application to the Face in Tooth-ache.*

Also a thick flannel compress wrung out of the following solution heated to near the boiling temperature, and kept applied for half an hour morning and evening, to the affected part, as a most excellent discutient in inflammation and suppuration of the face, in consequence of carious teeth, a complaint which has been very common in Edinburgh this winter, aggravated by the severity of the winter. I lately suffered most severely from this complaint, and found the above remedy the only one which gave effectual relief, after friction with camphorated oil, warm water fomentations, camomile poultices, friction with dry flannel, &c. had been tried in vain. The power of the muriate of ammonia solution in increasing the action of the absorbent vessels, and thus carrying off the swelling, was surprising.

R Muriatis Ammoniaë 3j.  
Acid. Acet. Tin. ʒiv.  
Aquaë Fontis ʒiij. Solve.

#### ANALYSES & NOTICES OF BOOKS.

“ L'Auteur se tue à allonger ce que le lecteur se tue à abréger.”—D'ALEMBERT.

*On the Motions and Sounds of the Heart.* By D. J. CORRIGAN, M.D.  
From the new Volume of the Transactions of the Association of Fellows and Licentiates of the King and Queen's College of Physicians in Ireland. Dublin, 1830.

FEW facts in physiology have been apparently better ascertained than the cause and circumstances of the heart's impulse. By the heart's impulse we

understand its peculiar pulse—its beating against the side of the chest—"the apex striking against the left side, opposite the interval between the sixth and seventh true ribs"—as the text books say. It has been generally, nay almost universally, attributed to the contraction of the ventricles; but this alone, says John Hunter, "could not produce such an effect; nor could it have been produced if it had thrown the blood into a straight tube in the direction of the axis of the left ventricle, as is the case with the ventricles of fish, and some other classes of animals, but by its throwing the blood into a curved tube, viz. the aorta. That artery, at its curve, endeavours to throw itself into a straight line, to increase its capacity; but the aorta being the fixed point against the back, and the heart in some degree loose and pendulous, the influence of its own action is thrown upon itself, and it is tilted forward against the inside of the chest." And so, upon the indisputable authority of this eminent man, the matter was supposed to be completely set at rest.

But careful observation, and repeated and well-attested experiments, have induced the author of the paper under review to dissent from the generally-received opinion; he has ventured, and we think very rationally, to dispute the sanction of great names, and to propose a solution of the moot point at once plausible, satisfactory, and ingenious.

If we take into consideration the true course of the aorta (for the best description of which the reader is referred to Portal's *Cours d'Anatomie Medicale*, tom. iii. p. 141), and suppose the arch to make an attempt at straightening itself by tilting up its loose extremity, this extremity must move, not towards the left side, but away from it, and towards the right. The heart being attached to the loose extremity, it necessarily follows that, if the arch could straighten itself, and take the heart with it, the heart would be carried by such straightening in the same direction,—that is, away from the left side. The direction of the pulmonary artery is parallel, or nearly so; and its tendency, therefore, in case of straightening, is to assist the aorta in propelling the heart towards the right side. Hunter's explanation would consequently seem to be at variance with the anatomy of the

heart and its large vessels. This, however, is not the only objection that may be urged against the cause of the heart's impulse assigned by Hunter. Both he and Dr. Bostock have fallen into a mistake with regard to the abstract physical fact of the motion produced by the injection of the aorta. This artery being always full in the living body, the reaction that takes place must be in the direction of the axis of the orifice of the aorta, no matter how the artery afterwards curves. "But," says Dr. Bostock (*Physiology*, vol. iii. p. 398), "I conceive that, if a curved elastic tube that is fixed at one end and hanging loose at the other, be suddenly injected, the injection will tend to elevate the loose end, whatever may be the direction of the curve with respect to its orifice." Our author replies: "In the first place, there is no analogy whatever between a curved tube with an open end, and the aorta; secondly, in such an experiment as that which Dr. Bostock describes, the loose end will be moved, not by the impulse of the fluid injected through the tube, or by its reaction on the curve, but by the reaction generated at the orifice when the fluid quits the tube. The direction of the discharging surface, with regard to the curve, instead of being immaterial to the effect produced on the curve, as Dr. B. asserts, is, in fact, the regulating influence, that determines which way the loose extremity of the tube shall move, and what shall be the effect produced upon the curve, whether increased or diminished.

"I shall here, as on every occasion when it is possible, instead of referring to abstract laws from physics, have recourse to direct and simple experiment. To demonstrate the fallacy of the assertion made by Bostock, Magendie, Hunter, Senac, and indeed by all physiologists who have supported their opinion, take the ordinary stomach-pump, with a long curved elastic tube attached; inject water forcibly through it, and you will find, that when the orifice is curved in towards the pump, the extremity of the tube will move outwards, or the tube will tend to straighten itself. If the orifice be pointed outwards, or away from the pump, the loose end will move inwards, or the curve will be increased. When the orifice is turned to the right or the left side, the tube will move in the opposite di-

rection. These movements of the tube prove to demonstration that the straightening of the curve, when it does take place, instead of being independent of, is altogether governed by, the direction of the discharging orifice. The accompanying diagram will explain my meaning better than words. Fig. 1. A,

Fig. 1.

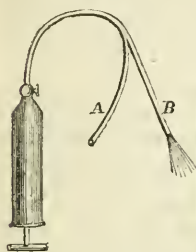
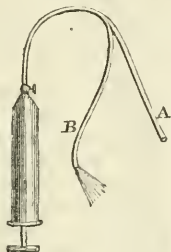


Fig. 2.



represents the tube with its orifice turned inwards. B, the position which the tube assumes from the reaction generated at the discharging orifice. Fig. 2. represents the experiment reversed: A, the tube with its extremity or discharging orifice turned outwards. B, the same tube driven in, or the curve increased by the reaction of the fluid rushing out. The principle embraced by Hunter, that a bent tube like the aorta will be straightened by the action of the fluid impelled through it, and the illustration offered by Dr. Bostock in support of this principle, are therefore both erroneous;—their application, of course, must be equally so."

Another, an *ad absurdum*, and indeed a strong argument against Hunter's explanation, is, that if it were true, the impulse against the side should not be felt until *after* the arterial pulse; for the arteries being always full, and fluids being almost incompressible, the pulse must be felt in the arterial branches the moment the ventricle begins its contraction; while the heart should not strike the side until a moment after the pulse is felt, when the ventricle has driven its contained blood into the aorta and has dilated its arch. But will any one venture to assert that the impulse against the side is felt *after* the impulse at the wrist?

There is another explanation of the heart's impulse offered by some eminent writers, who attribute it to the dilatation of the left auricle. But the slow filling of the auricle never could produce the rapid impulse with which the

heart strikes the side. Senac, with whom the idea originated, saw the difficulty, and very properly placed little or no confidence in it. Neither is Mr. Alderson's explanation more tenable; his hypothesis is ingenious, but he displays in it a more intimate knowledge of physics than of anatomy and physiology.

Having shewn that all the causes hitherto assigned for the heart's impulse "would either produce an effect diametrically opposite or are totally insufficient to accomplish it," our author proceeds to assign a cause adequate to the explanation of the phenomenon. This we may at once lay before the reader. The impulse of the heart against the side, then, according to Dr. Corrigan, is produced by the filling of the ventricles—or, as it may be more proper to state, the active agent in the operation, the heart's impulse, is owing to the *contraction of the auricles*.

This is an important, and, as far as we know, an original announcement. We shall, therefore, take ample note of the proofs; and we have need to do so calmly and dispassionately, for they begin by questioning a position hitherto almost taken for an axiom. Is it true that it is during the systole of the ventricles that the heart strikes the side? Dr. C. asserts that is not. Let us see, then, how he supports his assertion. It is, we find, a matter of simple experiment. Place the index finger of your right hand on the spot where your heart beats most strongly, whilst you put your left thumb on your right radial artery. When the heart beats slowly and forcibly, you perceive distinctly that the first tap is against the ribs, the second from the pulse; and the latter incontrovertibly denotes the contraction of the ventricle. How, then, can the heart's impulse arise from the contraction of the ventricle? The fact is, that here has been an assumption and a fallacy of long standing—an error taken upon trust, sanctioned by eminent names, and reiterated from one physiological writer to another; so that what was at first but bare assertion, through the credulity and indolence of successive observers was received, at length, as an undisputed truth—a veritable axiom. Now any one may confute it, and convince himself that the impulse of the heart against the side is anterior to the impulse in the arteries.



Besides, the actual inspection of the heart, in experiments made on living animals, plainly corroborates the statement. The impulse of the heart against the side does not take place, as it appears, until the heart has been almost fully dilated—of course, until the auricle has nearly *finished* its contraction. The impulse in the arteries, on the contrary, from their being always full, is felt at the very instant the ventricle *begins* to contract; and the interval is often so instantaneous as to be scarcely perceptible. Hence we may easily conceive how the mistake originated.

The following notes of the experiments just now alluded to, are too important to be omitted. "Our first object was to examine the heart in the living animal. A rabbit was selected, and, before proceeding with the experiment, the stethoscope was applied. Both sounds of the heart (the long and short sounds, of which more anon) could be distinctly heard. The right side of the chest was opened, the mediastinum being left uninjured. Respiration went freely on, little blood was lost, and we obtained a view of the heart in action far superior to any thing we could have anticipated. The animal lived in this state for about twenty minutes; sufficient time for accurate examination. Immediately after the operation, and when the heart was first brought into view, its motions were very rapid and tumultuous; but in a few moments they became less frequent and more regular, and the movements of the different parts plainly distinguishable: first the contraction of the auricles; second, the contraction of the ventricles; then the pause. At each contraction of the auricles the heart came forward, the ventricles being dilated in every direction, and driven downwards and forwards; at each contraction of the ventricles the heart retired into the chest. The contractions of auricles and ventricles were quick, but it is impossible to describe the rapidity with which the contraction of the ventricle followed that of the auricle. When the heart was beating violently, the succession was so rapid that the eye could scarcely distinguish between the two contractions.

"To ensure accuracy in our observations, a red vessel, or some line beyond the heart's apex, was chosen for the eye to rest on, and the motion of

the organ, towards and from it, was marked. Each time that the auricle contracted, the heart came forward; each time that the ventricle contracted; the organ retired.

"Authors describe the point of the heart as being tilted up, struck against the ribs; we could observe no such motion. The heart first applied itself to the parietes of the chest, by a small surface almost midway between the base and the apex, which quickly increased in extent.

"The stethoscope was now placed on the left side of the sternum, and while one of us listened to the sounds of the heart's action, and tapped with his finger at each impulse and dull sound, the others marked by the sight the visible contractions of the heart. The tap indicating the impulse and dull sound came after each pause, and synchronous with the contractions of the auricle, the ventricles being at the same instant dilated and propelled forward, the appendices of the auricles at the same time retiring. Another now took the stethoscope; the experiment was conducted in the same way, and with a similar result. These experiments were repeated six times on rabbits, and again, on a larger animal, and invariably with the same results.

"In warm-blooded animals, the motions of the heart are rapid, but particularly under pain; and hence it was difficult, even for the eye, when the chest was first opened, to follow its movements. The heart of a reptile, on account of its slow movements, and the little comparative sensibility of the animal, is free from this inconvenience. The heart of a frog, even under operation, beats only between fifty and sixty in the minute, so that the movement of each part can be most distinctly seen.

"Dr. Bostock describing the motion of the heart in a cold-blooded animal, uses the following words:—'For a short space of time the heart lies at rest, and suffers itself to be distended with blood; then it is suddenly seen to rise up on its basis, to shorten its fibres, and to expel its contents.' We may observe, first, that there is in this description a contradiction both to his own assertions in another part of his work, and a refutation of his theory of the heart's impulse. Dr. Bostock makes in this description the rising up of the heart anterior to the contraction of the ventricles. He says

in another place, 'I may without impropriety assert, that the beating is felt *not* at the instant when the ventricle *begins to contract*, but when the contraction has produced its effect on filling the arch of the aorta.' In the first quotation, according to Dr. B. the heart *first* rises up, that is, beats, *then* expels its contents; in the second passage, the heart *first* fills the arch of the aorta, that is, expels its contents, and then beats. He asserts with Senac and Hunter, that the filling of the arch of the aorta by the contraction of the ventricle, is the cause of the heart's rising and giving the impulse; yet in the description just quoted, he makes the rising of the heart anterior to the filling of the arch. Dr. Bostock's description is, however, not only at variance with his own assertions and theory, but it is even quite erroneous in point of fact. This the inspection of the heart in the living frog clearly shewed. Having removed the inferior portion of the sternum, and thus brought the heart clearly into view, the following phenomena were observed. The heart did not suffer itself to be distended with blood, as Dr. Bostock states; the blood was thrown into it by the auricle contracting with great energy. It did not rise up on its basis, but was dilated and driven downwards and forwards by the blood expelled from the auricle, and finally, as the ventricle contracted, the heart retired from the surface, being deepest in the chest, at the moment when the contraction was at its utmost.

"The heart of a frog is very large compared with the size of the animal; its movements are very slow, and its parietes, although strong, are almost transparent. These circumstances, but above all, the transparency of the walls of the organ, give the greatest certainty to observations on the actions of the heart in this animal, the presence or absence of blood in the ventricle being marked not alone by the increase or decrease of size, but also in the most beautiful manner, by the change of colour. The heart is quite pale when the ventricle is contracted or empty; a deep rich purple, when it is dilated or full of blood. This change of colour was an additional test of the accuracy of our observations, which we did not possess in warm-blooded animals. When the auricle was distended, it came fully into view; when it contracted, it did so

with great energy, retiring quickly from our sight. At the same instant the ventricle swelling, being distended with blood (as shown by its sudden change from extreme paleness to a rich purple colour,) was impelled with some force against the finger, the contraction of the ventricle following quickly upon its dilatation. It diminished itself in every direction, bringing its sides together, and its apex towards the base, and as it contracted, retired until its perfect paleness proved that it had expelled all its blood; the heart at the moment when its contraction was at its height, being deepest in the chest. Repetitions of this experiment confirmed our observations in every particular.

"We consider the examination of the heart of the frog as quite conclusive. Could a shadow of doubt have remained on our minds after the examination of the warm-blooded animals, it would have been completely removed by the inspection of the heart of this reptile; the change of colour presenting an infallible test of dilatation and contraction.

"Having now gone through the detail of the experiments on the living heart, we present the facts ascertained:

1. The auricles contract first.
2. The ventricles second.
3. Then the pause, or state of rest.
4. The contraction of the ventricles is rapid, and follows quick as can be conceived after that of the auricles.
5. The contraction of the auricles is comparatively slow.
6. The heart strikes the side when the auricles contract.
7. The heart retires when the ventricles contract.
8. The beat of the heart is produced not by the tilting up of the apex, but by its swelling and coming against the ribs, in consequence of the impulse given by the rush of blood from the auricle."

We regret that our limits at present will not permit us to notice Dr. Corrigan's very interesting observations on the sounds of the heart; but we hope to have an opportunity of doing so in an early subsequent number.

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## COATS OF THE TESTICLE.

To the Editor of the *London Medical Gazette*.

SIR,

In your review of Sir Astley Cooper's recent work "On the Structure and Diseases of the Testicle," you remark that, different from the nomenclature of Haller, Hunter, Pott, Warner, Sharpe, Earle, Ramsden, &c. "Sir Astley Cooper terms the first coat (*i. e.* the tunica vaginalis) *tunica vaginalis reflexa*; and the second coat (*i. e.* the tunica albuginea) *tunica vaginalis testis*; while he applies the term *tunica albuginea* to what may be considered a newly-described coat—one which lies under the last, and embraces closely the glandular texture of the testis." "To say, therefore," it is further added, "that the tunica albuginea of our best authors is *tunica vaginalis*, is just that sort of inaccuracy which is apt to puzzle the student."

Without meaning to invalidate the correctness of your remarks in general, I may be permitted to observe that the present nomenclature is the same as Sir Astley Cooper always used to employ in his anatomical description of this part of the body, while I was attending his lectures as a student; and I have now before me a diagram in illustration of this very point, from Sir A. Cooper's own words, distinctly shewing a *tunica vaginalis reflexa*, a *tunica vaginalis testis*, and the proper investing membrane of the testicle itself, a *tunica albuginea*; which last tissue or fibrous texture contributes to form the several compartments, or septulæ, containing the bloodvessels and the innumerable coils of the seminiferous tubes. Moreover, referring to Mr. Green's concise and accurate Dissector's Manual, it is there remarked that the "*tunica albuginea* is the *proper* covering of the testicle," and that "it has been *confounded* with the *tunica vaginalis*, but differs from that membrane in structure;" so that the *tunica albuginea* need not be "considered as a newly-described coat," as is observed in your Gazette. (See Green's Dissector's Manual, sect. ii. part ii. 1820.) It is likewise stated by the same confidential authority, that "the *tunica vaginalis* gives a *double* covering to the testicles,—it is first a

close covering, and is then *reflected*, so as to give it a second or loose covering;" and that the "whitish colour" of the close portion arises from the *tunica albuginea* "shining through the *tunica vaginalis*." In an interleaved copy of the Dissector's Manual in my possession, there is annexed to the pages treating on this subject another diagram, exactly illustrative of what has been just described.

Perhaps you will insert these observations in support of a nomenclature which, although it may be strange to some, must be familiar to the anatomical students of the school of St. Thomas's Hospital; and allow me to ask the question, at least with seeming propriety, whether it is absolutely necessary to adhere to the words of our best authors, supposing better words can be found to supply their place, or the same words be distributed in a better manner, always supported and exemplified by clear and definite descriptions? To depart from ancient rules, without judgment, leads to confusion and positive loss; but by carefully copying nature, and naming things according to their real use, structure, or connexions, without revering too much or despising the opinions of antiquity, often simplifies ideas, and is the only true way to reach something like certainty of knowledge.

Yours with respect,

J. A. H.

May 1, 1830.

# SKETCH OF THE PROFESSIONAL CHARACTER

OF THE

LATE WILLIAM LISTER, M.D.

Formerly Physician to St. Thomas's Hospital.

THIS estimable physician, after maintaining a deservedly high reputation in this metropolis for nearly half a century, died at his house in Lincoln's Inn Fields, on the 3d of January, 1830, aged seventy-three years.

Dr. Lister possessed an acute and vigorous understanding, which had early received the culture of a liberal and extended education. His deep and solid attainments, both in philosophy and in the classics, formed an admirable basis



for studies more directly of a professional nature. These he afterwards pursued in the university of Edinburgh, with such persevering ardour and success as to acquire a high character for his knowledge of medicine and the collateral sciences. He took an extensive range in study, and always continued to retain an attachment to general science; and it is worthy of remark that, to the very last, he continued to keep pace with the improvements of the day, and even in chemistry to make himself intimately acquainted with the rapid progress of discovery. So great a love also did he cherish for classical literature, that, until within a short time of his death, he was accustomed, in the intervals of professional duty, to which he conscientiously devoted a large portion of his time and energy, to recreate himself with the poets and historians of Greece and Rome. Nor did he discover any diminution of interest in the science of mind, on which he continued to read with the same deep attention and eager spirit of inquiry which had characterized the investigations of his early collegiate life.

Notwithstanding, however, this steady attachment to general science and literature, in which his acquirements were not less extensive than profound, Dr. Lister constantly made his profession the principal object of attention. Few individuals, perhaps, have possessed a constitution of mind better adapted for the prosecution of medical inquiry. An acute perception and great power of attention were united with a sound and discriminating judgment, by which he was enabled to view a subject in all its bearings, carefully separating what was essential from that which was merely accidental and adventitious, and generally deducing from the whole a correct and logical conclusion. So thoroughly and patiently, indeed, did this indefatigable physician investigate the more obscure forms of disease, as seldom to have occasion to amend his opinion or retrace his steps. Like his intimate friends, Dr. Baillie and Mr. Cline, he was accustomed to express his view of a case in a few clear, forcible words, and in a manner simple and unadorned, yet calculated to impress the hearer with a conviction of the value and correctness of the opinion.

Dr. Lister's practice exactly corresponded with the clearness and decision

of his mind, evincing an equal degree of simplicity and of energy; and thus enabling him to ascertain, with considerable accuracy, the progress of the disease and the effects of the remedies.

Nor would it be proper to omit a special reference to those sterling moral qualities, which were not less conspicuous and influential than his intellectual endowments. Uncompromising integrity and genuine disinterestedness, were strikingly observable in his whole character. The welfare of his patients and friends, rather than his own individual interest, appeared to be the predominating principle of action. He had a just conception of what belonged to the character of a physician, and always maintained, by example as well as by precept, the dignity and value of his honourable profession.

With such principles and such conduct, it is not surprising that Dr. Lister should have inspired, in the minds of those who had the privilege of his friendship, a high degree of respect and attachment; although, from a rooted aversion to every thing like pretension and display, his manner may have appeared to strangers cool and unattractive. Those, however, who knew him intimately had abundant proofs of the tenderness and depth of his feelings.

With a mind so well stored and disciplined, and with opportunities and habits of observation so favourable to research, it is to be regretted that Dr. Lister should have written comparatively little. The specimens of biography given in the *Gentleman's Magazine* for November 1817, and October 1823, containing short memorials of two of his most beloved and intimate associates, viz. Dr. Wells and Dr. Baillie, sufficiently prove how admirably he was qualified for literary undertakings.

But to the most able and diligent, as well as to others, "there is a time to die." Dr. Lister contemplated that important change with remarkable composure. During the last thirty years of his life, indeed, he had suffered repeated attacks of angina pectoris, and had a constant persuasion of being himself the subject of organic disease about the heart. Of this settled and deliberate conviction he could not divest his mind, notwithstanding the remonstrances of his brethren, especially of his intimate friend Dr. Wells, who laboured to per-

suade him he was merely hypochondriacal: yet the post-mortem appearances decisively prove that Dr. Lister's usual judgment did not forsake him even in the consideration of his own individual case.

Among the papers examined after his death, a memorandum was found, dated December 20, 1821, in which he details the principal symptoms of his complaint, and his opinion of their nature, concluding with the following direction: "To ascertain the truth of the above conjecture, and to recommend the practice of post-mortem examinations by an example in my own person, I desire that my excellent friend, Mr. J. H. Green, may be requested to make a complete examination of me as soon after my death as he thinks desirable, and to furnish my son Nathaniel\* with a statement of all he observes." In accordance with this request, an accurate inspection was made by Mr. Green, which remarkably confirmed the opinion which the deceased had entertained of the nature of his disease. The valves of the aorta, as well as various portions of the aorta itself, were ossified, as were also the coronary arteries. The mitral valves were also partially ossified, and the tricuspid passing into the same state. There was hypertrophy of the left ventricle; and adhesions had formed between the heart and pericardium. A large quantity of serum was contained in the cavities of the pleura. The internal carotid arteries were ossified, and the vertebral arteries thickened.

Notwithstanding occasional paroxysms of agonizing pain, Dr. Lister steadily pursued his usual avocations, and actually visited his patients until two days preceding his death. He had suffered, however, exceedingly during the severe weather of January last, both from difficulty of breathing and general uneasiness about his chest. Towards the evening of Tuesday, symptoms of effusion more distinctly appeared; and on the morning of Wednesday, surrounded by his numerous and affectionate family, and in the full possession of his mind, this venerable man gradually ceased to breathe.—*Med. and Phys. Jour.*

## MEDICAL GAZETTE.

Saturday, May 8, 1830.

"Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."—CICERO.

### FAILURE OF THE MEDICAL DINNER.

THERE are few things more annoying in their way than for some notorious character—a bankrupt in reputation, a kind of person whom all the world avoids—to persecute you with his particular notice, and take all public opportunities of inflicting upon you his undesired acquaintance, firmly determined not to understand your numerous demonstrations of wishing to get rid of him. Precisely such a bore is a certain contemporary of ours to that portion of the profession called general practitioners. It is impossible to imagine any thing more persecuting than the systematic impertinence with which they are treated by their *soi-disant* champion.

It will be remembered, that soon after the decision by which a jury sanctioned the charge of a general practitioner for his attendance, it was announced that this event was to be celebrated in some public manner; and, after due deliberation, it was resolved that a dinner was the most eligible method of accomplishing the desired object. The announcement of this intention was no sooner made than we saw, from a variety of circumstantial evidence, that it was a trick of Wakley's, to bring about a radical meeting, in lieu of that which so egregiously failed about eighteen months ago. Such being our conviction, we felt it to be our duty to caution the profession against it; which we did accordingly—first on general principles (see Gazette, Feb. 20), and subsequently on the additional ground of the mea-

\* Then a student in Medicine, but now M.D.

sure having emanated from the neighbourhood of St. Clement's church (see Gazette, March 6th); on which last occasion our words were, "*probably the measure would not have succeeded at any rate; but the manner in which Wakley has endeavoured to identify himself with it, has ensured its failure.*" This has been fulfilled to the very letter; for not only have the general practitioners of the metropolis refused to come forward, but many of them have assigned the above as the specific grounds of their declining to do so.

As the measure is now set aside, and all intention of the dinner abandoned, we shall briefly point the circumstances which led us so confidently to assert that it was an attempt to convert a general and most important, into a party, and most insignificant question—from the advancing prospects of the general practitioner to the waning fortunes of the *Lancet*. In the first place, in that journal the proposal to celebrate the "victory" of Mr. Handey originated—not openly, but in the form of an anonymous letter, to which was appended a note of Editorial approbation. The next step consisted in the formation of a committee, who prepared papers for the signature of those who might be disposed to sanction some public measure on the occasion; and these, rather injudiciously, were sent *from the Lancet Office* to various medical booksellers, a circumstance which, coming to be known, prevented any signatures from being obtained. We stated this fact to put the public on their guard; and next morning the blank testimonial of the influence and popularity of the *Lancet* was suddenly removed from the quarter whence we were supposed—and erroneously supposed, to have obtained our information.

Alarm being felt lest our decided opposition should influence the profession, and conscious that any apparent con-

nexion with the *Lancet* would mar the plan, a new set of stewards was, after much difficulty, obtained, having among them several men of known respectability, who were misled into the belief that the Editor of the *Lancet* had no longer any concern in the measure; and who, as we shall presently explain, had other and more important objects in view than the mere parade of a public dinner. The name of Lambert was withdrawn, as not likely to benefit the cause; and though a few wolves remained, yet were they in sheep's clothing, well knowing the necessity of assuming some disguise for the accomplishment of their purpose. Loud and unmeasured were now the commendations of the *Lancet*: it was "the great medical dinner," which was to prove "an event of vast importance in medical politics," and to be present at which was "the bounden duty of every surgeon." In short, no means were left untried, no effort spared, to further the great design; no terms of eulogy were too warm for those who favoured it—no abuse too gross for those who were opposed to it. Still, however, the public were backward; the list of guests did not increase, and as the time drew near, misgivings sprung up in the "champion's" bosom: he began too late to feel that the general sense of the profession had been truly depicted in the pages of this journal, and that the dinner—would fail. Under these distressing convictions, our *respected* contemporary contrived rather a cunning mode of getting out of the dilemma; he publishes a list of toasts which were not to have been given, and out of this nonentity seeks cause of quarrel with his own abortive measure; and after months spent in furthering it by every means in his power, at length ends by asking, "What the devil is the dinner to be held for?" The trick, though dishonest, is ingenious, and we may say of it—"Se non e vero, e ben trovato." De-



sirous to divert attention from his own tergiversation, he hurries through all the hackneyed topics of abuse: we are told for the hundred-and-first time that the physicians and surgeons of these kingdoms, almost without exception, have entered into "base and malignant combinations" to injure the general practitioner and "screen their own black and murderous deeds," and a great deal of stuff besides, such as knaves only are accustomed to indite, and fools only to believe. Among these spurious toasts one is "the Medical Press," and we allude to this the rather as there is really much justice in the character drawn of it by our contemporary. Our readers we doubt not will concur with him and us in thinking, that among the conductors of the medical press are to be found some "*most venal, stupid, and malignant,*" who wield their pen "*in an infamous cause;*" being "*scoundrels, whose only object has been, for a paltry pittance, to destroy reputation,*" and that such constitute "*a villanous gang,*" whose conduct has been truly "*fiend-like.*" Such, gentle reader, is the character of certain among those who conduct the medical press in this country, and traced by the hand of one who is evidently acquainted with the secret workings in the minds of those to whom the description so remarkably applies. He further adds, that they are not worthy to blacken Mr. Wardrop's shoes; but on this point we are not prepared to speak positively: from the great experience of some of them in blackening characters, we should think them tolerably well fitted for the occupation alluded to—but this, with deference to our contemporary, who is more intimately acquainted with their merits.

But to return: up to the latest moment did our amiable Editor use every possible means to have a sufficient number of persons collected together to make a decent appearance; and by a

singular perversion in the result, secured his own defeat by the very efforts to obtain the victory. Latterly he appeared personally in the field; and those who before had wavered, hesitated no more. There was a general and avowed determination not to become mixed up in a proceeding from a participation in which, it was obvious, that disreputable persons could not be excluded. Galled by the humiliation, and writhing under the sense of exposure, our worthy made a merit of necessity, and, at the eleventh hour, abused the dinner, to throw dust in the eyes of his readers, and make some innocent souls believe that *he* prevented it by withdrawing his patronage. He tells us, with amusing gravity, that the public has been in a state of "intense excitement" regarding this same dinner; the origin, progress, and abandonment of which they have viewed with the most absolute apathy. But we beg his pardon: though not *the* dinner, there is still to be *a* dinner. The matter, we are told, has assumed "a new character." Mr. Hume is to be supported by Mr. O'Connell, and "*other influential members of the House of Commons!!!*" Mr. Cobbett, we presume, will also honour the meeting with his presence, and return thanks for the compliments paid him in the *Lancet*. If this attempt should be persevered in, we should like to see who of our profession will be bold enough to go; who so beggared in reputation as openly to avow that he can be no farther lowered; or who with a name so bright that even this act of infamy would not stain it.

Meantime, we have only to add farther, that the stewards, finding the day previous to that on which the dinner was to be held, that only fifty persons could be calculated upon altogether, waited upon Mr. Hume, who advised them to give up the measure entirely, under such unpromising circumstances. This they accordingly did, but dined together on the appointed day, making,

with some friends, a party of about twenty, when the nucleus was formed of an association for the advancement of their mutual interests, which, if well conducted, may prove of infinitely more service than any thing which could have resulted from a public dinner, even had it been as pre-eminently successful as its failure, owing to the mar-plot with whom it originated, has been conspicuous.

After the above was printed, and while this sheet was passing the press, we received a Letter from one of the late Stewards, which will be found at page 224.

#### REFUSAL OF A PHYSICIAN TO GIVE HIS OPINION IN A CASE OF ALLEDGED INSANITY.

NOT many days ago the Lord Chancellor applied to one of the most eminent physicians at the west end of the town for his opinion in a case of alledged insanity, when the doctor positively declined having any thing whatever to do with it, declaring his determination to be founded on the unjustifiable manner in which the lawyers treated those physicians who endeavoured to afford the legal authorities all the information they could in the case of Mr. Davies. This is as it should be, and a few such refusals would bring the gentlemen of the long robe to their senses on this point.

#### THE KING'S HEALTH.

NOTHING can be more contradictory, or probably for the most part more incorrect, than the rumours in circulation with regard to the state of his Majesty. We have reason to believe that the statement lately made in the newspapers, that the disease was angina pectoris, is wholly unfounded. This form of complaint,

our readers are aware, is one marked by excruciating agony in the region of the heart, and dread of instant death—a species of suffering which we are happy in believing his Majesty has been spared. Neither, we imagine, is there any ground for the idea that effusion has taken place into the chest. Such an occurrence would give rise to permanent difficulty of breathing, whereas the impediment of the function assumes an intermittent form, coming on in paroxysms, during which the heart's action is irregular. At other times—and that is during the intervals—the breathing is quiet and the pulse natural. We understand too that his Majesty is able to lie on the back as well as on either side, circumstances strongly militating against the idea of hydrothorax. Considerable doses of Hoffman's anodyne, and opiates, have been administered, which would imply that his medical attendants regard the affection as of a spasmodic character. These have afforded considerable relief, generally producing free perspiration.

While any irregularity in the heart's action and any impediment to the function of breathing continue, it would be absurd to say that the case can be free from danger, or that the risk of sudden change is not to be kept in mind. At the same time there is no evidence afforded by any thing which has become known that organic disease—if present at all—has occurred to such an extent as necessarily to lead to an unfavourable termination. The public have an idea that organic disease of the heart is incompatible with life, whereas individuals may, and often do live, for many years after extensive changes of structure had occurred.

#### COLLEGE OF PHYSICIANS,

Monday, May 3.

THE chair this evening was taken by Dr. Roberts, when a paper was read by the registrar, Dr. F. Hawkins, consisting of

#### *“ Observations on the Blood, by William Stevens, M.D.”*

The author remarked that there is often, in the West Indies, a malignant form of yellow fever, in which it is obvious, from the symptoms during life,

\* A list of toasts, &c. was forwarded to us by the stewards. Except to correct the misrepresentations of the *Lancet*, these appeared to us not to possess sufficient importance for publication. The intended object has, we conceive, been accomplished by the remarks in the preceding article.

as well as from the appearances presented after death, that the disease has had its chief seat in the fluids. The cause of death, he thinks, under such circumstances, only becomes apparent when we open the heart and observe its contents. In this we find "a dissolved fluid," in place of blood; which is black as ink, and unfit for the purposes of life. These and various other circumstances induced Dr. Stevens to pay particular attention to the blood, and to make a number of experiments upon it, the results of which we subjoin.

The importance of the blood, and of the changes which it presents, have been comparatively neglected for nearly a century; and to this the author attributes the assumed fact of our "going back" in the theory of fever, at a time when such brilliant discoveries have been making in other departments of medical science. On examining the blood of those who had died of yellow fever, the following changes presented themselves.

1. It was more fluid than natural; a circumstance partly attributed to an excess of serum and partly to the fibrin not being found in its usual quantity. Besides this, the colouring matter was observed to be frequently detached from the globules, and dissolved in the serum; nor can this colouring matter be separated from the serum by filtration, or any other mechanical means. As the disease advances, however, the red colour is lost, and the whole circulating current becomes black, as well as thin.

2. The whole mass of blood, both in the arteries and veins, was changed to this black colour. Dr. S. has often taken black vomit from the stomach, and blood from the heart, and these have resembled each other so much as to render it almost impossible to distinguish them.

3. In bad fevers the saline matter appears to be exhausted faster than it enters the circulation; the blood losing its saline taste—of which circumstance the black colour is found to be a certain proof.

4. The blood, though dissolved, is not putrid; but dissolution is regarded by the author as the first step in the putrefactive process. Such dissolved state is held to be the cause, and not the consequence of death; being sometimes present during life. But it is stated to be the effect, not the cause of fever. Now, as this dissolved condition is re-

garded by Dr. Stevens as being frequently the sole cause of the fatal termination, so it became an object with him to discover some agent capable of preventing this change.

Saline matters, it is observed, are generally antiseptic;—during fever they are diminished in quantity; and hence it was thought that their administration, in the form of medicine, might be advantageous. Accordingly this was done; and, after repeated trials, the author became convinced that, when properly administered, they have "a specific effect" in preventing the dissolution of the blood.

Witnessing these results, and recollecting that various neutral salts pass into the circulation unchanged, Dr. Stevens was led to try what effect would be produced when these and other substances were mixed with the blood while it was yet warm and fluid\*. The results were, 1st, that acids, as a general rule, rendered the blood darker; and this in proportion to their strength. When any of the strong acids was mixed with a little water, and added to recently drawn blood, this immediately became changed from red to black. Even the vegetable acids produce this effect.

2dly. The pure alkalies produce a similar change, though not in so remarkable a degree.

3dly. The neutral salts immediately give to venous blood a bright scarlet colour. This effect likewise resulting although the alkali might be a little in excess, as in the subcarbonate of soda.

4thly. Even the black and morbidly attenuated blood taken from the heart in fatal cases of yellow fever, was similarly changed into a bright red fluid by the addition of neutral salts.

Dr. Stevens proceeded to state, that he intended to enter on the subject more fully in a work which he is about to publish; when he will endeavour to prove that black is the natural hue of the colouring principle of the blood—and that the various properties resident in blood depend on the quantity and condition of its saline impregnation.

In drawing his inferences, the Doctor argued, that, in violent fevers, even when proper means are used, chemical changes nevertheless frequently take place in the circulating fluids, and that

\* The best mode of conducting this experiment is to mix the agent so employed with a little water, and add to it the blood before it coagulates.



these changes "are almost always the sole cause of the mortality." The deterioration of the blood, in the fevers of hot climates, is said to be very obvious, and to occur in the milder forms of the disease witnessed in this country, as proved by the experiments of Dr. R. Clanny, of Sunderland.

As the counterpart of this, it is held, that when efficient means are used "to protect the organs" during the early stage, and proper diet and saline medicines are subsequently exhibited, the bad symptoms are generally warded off. These are supposed to act chiefly by preventing the "dissolution" of the blood till the fever abates and the danger is gone. A method of treatment, founded on these views, is stated to have been remarkably successful, both in the hands of the author and others. Thus, fever prevailed at Trinidad in 1828: the patients were bled and purged freely at the commencement; then they had neutral salts; during their convalescence, quina; and one of Dr. Stevens's correspondents, Mr. Greatrex, stated, that of 340 cases so treated not one proved fatal. On the contrary, emetics, calomel, antimony, opium, and acids, are represented as increasing the evils they are intended to relieve; and, in fact, as greatly augmenting the rate of mortality in the fevers of hot climates. The Rochelle salt, and the carbonate of soda, were particularly mentioned by Dr. Stevens, though not to the exclusion of "other active saline medicines;" and, in conclusion, he stated that since the treatment above alluded to had been adopted, the yellow fever had been in a great measure disarmed of its terrors.

#### ROYAL INSTITUTION\*,

Friday, April 30, 1830.

WHITLOCK NICHOLL, M.D. VICE-PRESIDENT,  
IN THE CHAIR.

#### *Descent from Mont Blanc.*

DR. EDMUND CLARK, who last season gave a very amusing account of his ascent of Mont Blanc, this evening proposed to describe his descent. It was,

however, rather a mineralogical dissertation, and its chief interest depended on numerous specimens brought from different parts of the mountain, which cannot be described in a report. He contended that the rocks should be considered *granitic*, rather than *granite*; and, to familiarize the altitude to travellers at home, gave several somewhat novel computations—such as raising the monument to seventy-six times its present height, or piling St. Paul's upon itself thirty-nine times, or both the monument and the cathedral twenty-six times; which would then about equal the height of the mountain, it being, according to several admeasurements, from 15,752 to 15,772 feet above the level of the sea. The Doctor particularly recommended all future travellers to take only *unmarried men* as guides, that, if an accident such as happened to him should occur—for several of his guides were buried in an *avalanche*—the consequences of the misfortune would be less extensively distressing.

In the Library there were several camelleons, and other interesting specimens of natural history; especially the horn of a rhinoceros, upwards of three feet in length.

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#### UNIVERSITY OF LONDON.

##### MEDICAL DIPLOMA.

To the Editor of the *London Medical Gazette*.  
(With the Warden's compliments.)

IN the "Second Statement by the Council," published before the opening of the University in 1828, it is announced that, "besides certificates of the professors, the University will grant certificates of general proficiency in literature and science. Every student will be required to produce a certain number of professors' certificates, before he can be allowed to enter upon the examination of the general certificate."

The object in granting this certificate is, to put the student in possession of a document which shall be an evidence of his having acquired at the University a certain amount of knowledge in the different departments of general and professional education. But to make the document practically useful, it must have such a *designation* as the person obtaining it can conveniently affix to his name, and be called by; as is the case when he takes a degree at an incorporated university.

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\* ERRATUM.—In our last report, page 182, col. 2, line 35, for "twist," read "burst."

The Council have been for some time engaged in considering the qualifications, conditions, and the form, under which this diploma shall be granted in the different departments of education; they have not yet settled what these shall be in any other than the medical school, but expect to be able to announce the whole scheme before the conclusion of the present session. Having come to a decision upon the medical diploma, the Council have thought it advisable to make it known before the medical students of the present session shall be dispersed.

It has been resolved that the general University certificate shall be granted, in the medical school, under the following conditions and regulations, and that it shall be called "*The Diploma of Master of Medicine and Surgery in the University of London*," (which may be thus translated and abbreviated, "*M. Med. et Chir. U. L.*")

1. That the candidate shall be twenty-one years of age.

2. That he shall have attended lectures on professional subjects, during three academical sessions of this University; or two sessions at this University; and one winter session of at least five months' duration in any established school at home or abroad.

3. That he shall have acquired certificates of honour\* in the following classes in the University:—

Practice of Medicine,	Materia Medica,
Anatomy,	Botany,
Physiology,	Chemistry,
Surgery,	and
Midwifery, and Dis-	Anatomical Demon-
eases of Women	strations and Dis-
and Children,	sections.

4. That in the year which may be spent out of the University, he shall have attended lectures on two different professional subjects, each course of such lectures being of at least five months' duration.

5. That he shall have attended the medical practice of an hospital, containing at least 100 beds, for twelve months; and the surgical practice of the same hospital, or another hospital of the same number of beds, for the like period of twelve months.

6. That he shall be required to translate a passage in writing from Celsus, Gregory, Heberden, or other Latin medical author.

7. That having complied with the preceding regulations, he shall write an Essay in the English language on some professional

subject, chosen by himself, and approved of by the Faculty of Medicine before the Essay is composed. That this Essay shall be read in whole or in part, as the Faculty may desire, at a public meeting in the University; and that the candidate shall be called upon to explain or defend the doctrines maintained in his Essay. That he shall also make an anatomical demonstration, and be examined upon any part of his professional studies on which the Faculty of Medicine may think proper to propose questions.

In proposing the above regulations for conferring an honorary distinction suited to surgeons and general practitioners, the Council have thought it proper to require attendance on those classes only which are necessary for obtaining the diploma of the College of Surgeons of London and Society of Apothecaries. But they are desirous that the attention of medical students should also be particularly directed to the subjects of *Clinical Medicine*—*Comparative Anatomy*—and *Medical Jurisprudence*; and it will also be a great recommendation to candidates that they should possess some knowledge of *Mathematics*—*Natural Philosophy*—and *Natural History*. The scheme of instruction in the University affords ample opportunity for such studies; and a diligent pupil, during the period prescribed by the regulations, may obtain respectable knowledge in several of these departments, without interfering with the more direct object of his pursuits.

The diploma will be conferred in public on the 23d of December in each year, or the 22d, if the 23d be a Sunday; and the examinations will commence on the corresponding day of the preceding week. The Essay must be sent to the Secretary of the Faculty of Medicine on or before the 15th of November, and must be signed by the candidate, with a declaration that it is wholly his own composition. In the event of students leaving England, or in other cases of emergency, the diploma will be granted at other periods of the session, if the candidates possess the necessary qualifications.

In selecting the designation, care has been taken to avoid all interference with the titles and privileges conferred by chartered bodies. The value of the diploma to the possessor of it will depend upon its being known to be granted to those only who, after a strict examination, prove themselves worthy of such a distinction.

The following extract from a report of the Faculty of Medicine, contains their views as to the good effects upon the education of medical students which this measure may tend to produce.

"The medical profession is divided into

\* It is proper to explain to those unacquainted with the system of the University, that certificates of honour are granted at the conclusion of each session to the more distinguished students in the several classes. The distinction is conferred, if answers in writing to questions proposed during a very carefully conducted examination, shall prove that the student must have diligently attended to the instruction of the professor.

three classes; viz. physicians, surgeons, and general practitioners. The latter form by far the greater body, and until this University can give a physician's degree, not many of those destined for that branch of the profession can be expected to take any considerable part of their education in its medical school.

"Under the appellation of general practitioners are included two distinct classes of medical men. One of these consists of practitioners who hold a highly respectable rank in the profession, and who have devoted much time, labour, and money to their professional education; men possessed of some attainments in the collateral sciences, and who, practising their profession in a liberal and scientific spirit, have the highest claim to the confidence of the public. Another class bearing the same appellation, consists of those who have acquired the right to practise by possessing only the *minimum* of knowledge by which the licence can be obtained, earned by the smallest possible expenditure of time and labour, and who consequently have very imperfect professional attainments. The public possess so little knowledge of the details of a medical and surgical education, that all the most serious duties of the profession are commonly confided, without inquiry, to any one who calls himself a general practitioner, and to such hands, especially in the country, the largest portion of professional duty and responsibility is intrusted.

"It becomes, therefore, a great duty for the University to endeavour to remedy the evil, as far as it has the means of doing so, by holding out this honorary distinction as encouragement to general practitioners to follow such a more extended course of study as the science they profess, and as the public interest require."

(By order of the Council,)

LEONARD HORNER, Warden.

University of London,  
24th April, 1830.

## HOSPITAL REPORTS.

### ST. GEORGE'S HOSPITAL.

*Compound Fracture of the Leg, accompanied by Delirium Traumaticum, treated with large doses of Opium.*

J. R. 45 years of age, was admitted into St. George's Hospital on the evening of the 6th of November last, under the care of Mr. Keate, with fracture of both bones of the left leg. The tibia was broken just below its centre, and badly comminuted. The compresses were soaked with blood, which had escaped from a small wound situated over

the fracture, and now scarcely perceptible. The skin in the neighbourhood was thin and dark-coloured, with several small vesications. The fracture of the fibula was at its upper part. The whole limb was swelled to a large size, partly from effused blood, but chiefly from oedema. The opposite leg was also oedematous.

The accident happened on the preceding evening, a few miles from town, and was produced by his attempting, when in a state of intoxication, to get on a coach, which was moving at a rapid pace. One of the wheels is said to have struck the limb, but not to have passed over it.

His general appearance was very unfavourable, the complexion being sallow, interspersed with spots of acne rosacea; his sharp sunken eye, with the arcus senilis, his scanty grey hairs, and trembling hand, bespoke premature old age. He must once have been a stout man, but was now thin, and of a relaxed fibre. He stated himself to have been a wine and spirit merchant, in respectable circumstances, and confessed that he was addicted to the immoderate use of both spirituous and fermented liquors; that he had been occasionally the subject of gout; and, judging from his own account, had once or twice suffered from symptoms resembling delirium tremens; notwithstanding which he described his general health as being tolerably good. Since the accident he had suffered from troublesome diarrhoea, and had had no sleep. The pulse was 86 and steady; skin cool; tongue furred in the centre, but moist; leg not very painful. Limb placed in a junk; to be kept wet with a strong camphorated spirit lotion, and he was ordered—

Liq. Opii Sedativ. ℥l. ex haust.

Camph. ʒiiss. statim.

In two hours after, being restless, the draught was repeated, with ℥xxv. of the Liq. Opii.

8th.—Limb going on favourably. The wound has healed, and the appearance of the skin has greatly improved; the diarrhoea has ceased. He has been taking the following draught every six hours:—

Liq. Opii Sedat. ℥xxx. Ammon. Carbon: gr. vj. Mist. Camph. ʒiiss.

His nourishment has consisted of beef tea, arrow root, &c. Has had little or no sleep since his admission. To repeat the draught, with an increase of ℥xx at bed time, and to have 3 oz. of gin daily. of the Liq. Opii.

9th.—Last night he became very restless, tossing about in and attempting to get out of bed, and talking much of law business in which he was concerned, but when spoken to answered rationally. The pulse became less steady in its beat and quicker; some strong gin and water was given him and a double dose of opium; he slept a little towards



morning, but even then he kept constantly moving the limb about in bed. He is to-day much more composed, but quick and irritable in his manner. Pulse upwards of 100; tongue furred; bowels confined; the limb to be placed in Amesbury's apparatus. To repeat the draught of liq. opii sed. with a drachm dose at bed-time, and to have 6 oz. of gin daily.

10th.—Another restless night and no sleep; the bowels have acted freely from opening medicine. He states that he has been in the habit when not well of occasionally taking the tinct. opii in drachm doses. To continue the draught every 6 hours, with a drachm of liq. opii. sed. in each.

11th.—Last night the delirium and restlessness greatly increased, and in the absence of the nurse he got out of bed and began to dress himself. On being spoken to his answers were quite rational, although his manner was extremely quick and irritable. Pulse to-day 96, of sufficient strength; bowels open; tongue clean; leg looking well; the bones are kept in good apposition by the apparatus in spite of his constant motion.

12th.—Last night the delirium, &c. became worse than ever, and he was with difficulty kept in bed. At 11 P.M. three grs. of the ext. opii were given him, and repeated at intervals of two or three hours. During the night he took grs. ix. of opium, which did not procure him any sleep. To-day the pulse is 100; tongue a little furred; the leg more swelled.

To discontinue the six-hour draught, and to take every two hours three grs. of the ext. opii.

9, P.M.—Having taken two doses without any effect, grs. iv. of the powdered opium, with gr.  $\frac{1}{4}$  of ant. tart. were administered, and ℥j. of porter was given him, soon after which he fell asleep, and slept soundly for several hours, during which time both hands and legs were observed to be constantly in motion, and he sometimes struck one side of the face with one hand and the other side with the other for a minute together without awakening, and made other odd gestures.

13th.—Last night, at 10 P.M. he took one five-grain dose of pulv. opii, soon after which he fell asleep and slept soundly the whole night; he is to-day much better, but very irritable. Pulse 100; tongue furred; bowels confined; leg doing well, but of a large size; fluctuation of fluid to be felt over the fracture. To continue the gin, porter, &c.

14th, 8 A.M.—Since yesterday he has taken xij. grs. of pulv. opii, but has not once slept, and passed a very restless night, but is in other respects the same.

To have Oss. Gin daily, to continue the Porter, and to take the Opium in vij. gr. doses.

15th.—Up to ten o'clock last night he had taken during the day xxviij. grs. of pulv. opii; was now given a ten grain dose, but he passed a sleepless night, although quieter than the last. To-day, however, he is very restless, with constant starting of the limb, which he says is produced by some one striking him violently on the calf of the leg, with a stick or stone. Talks sensibly, but wanders at times. Pulse 90; tongue furred; bowels open. It was now directed that he should take one gr. of the acetate of morphia every two hours. The stimuli to be continued.

16th, 10 A.M.—Since yesterday morning he has taken ix. gr. of the morphia, without any effect, his night having been worse than any since his admission; the delirium, &c. being constant. The leg is doing tolerably well, although the bones have been a little displaced by his jumping out of bed; fluid over the fracture becoming absorbed.

Rep. Gin, Porter, &c.

N. B.—The acetate of morphia is known to be good, having been procured at Mr. Garden's, in Oxford-Street.

17th.—Up to six o'clock last evening, he had taken a scruple of powdered opium, and a drachm of the tinct. opii had been given by the rectum, but he remained as restless as ever. He now took a scruple dose of crude opium, soon after which he fell asleep, and continued to sleep soundly for five or six hours. To-day he is quite a different man, being much less irritable, &c. Pulse 90, wanting power; bowels open. The fluid over the fracture has become absorbed. The leg is doing well, but becomes so much swelled towards night as to require all the straps of the apparatus to be loosened.

To take the Gin as usual, with ℥ij. of Porter, and meat diet.

18th.—Towards evening delirium came on, with great restlessness. A scruple of crude opium was given him, but not producing any effect, x. grs. more were administered, after which he slept soundly for many hours, and is to-day better than he has ever been since his admission.

19th.—Took a scruple of crude opium last night in two doses, and slept well. Leg going on favourably. Much less starting of the limb.

20th.—An attempt was made last night to reduce the dose of opium to xiv. grs., but he became very restless, and it was found necessary to give half a scruple more; after which he slept tolerably well, but is more irritable in his manner to-day.

22d.—For the last two nights he has taken each night a scruple of the crude opium, and has rested well. This has always been given in two doses, the second not being given till his restlessness, &c. required that it

should be administered. Leg examined, and union found to be very considerably advanced.

24th.—Not quite so well, and last night he took ℥ss. of the crude opium before sleep could be produced. He yesterday began to complain of pain and stiffness about the right shoulder, but nothing can be discovered in this situation to account for it: thinks himself that it is rheumatic.

25th.—Since the last report he has continued to take a scruple dose of crude opium at bed-time, combined with a scruple of P. Ipecac. comp. The delirium has been very slight, but no sleep could be procured without the opiate. He still complains of the pain in the shoulder, which is now swelled and somewhat tender, but moving the arm does not produce pain; has had no rigors.

29th.—The tumor in front of the shoulder joint has increased to a large size, and fluctuation is distinct. No rigors, but considerable febrile disturbance. Has taken no opium since the evening of the 27th; no delirium; has rested tolerably well; leg going on as well as possible.

Ordered Bark, with the ammoniated tincture of Bark, every six hours. To take Oss. of red wine daily, with the porter and fish diet. Discontinued the gin.

Dec. 1st.—Abscess punctured, and a large quantity of well formed pus evacuated, which did not in any way communicate with the joint, but a probe passed to the under surface of the scapula. A poultice to the shoulder.

15th.—There has been no return of delirium, and he has only occasionally taken a small dose of tinct. opii. at bed-time. The discharge from the abscess has greatly diminished; the apparatus was removed from the leg ten days back, the bones having become well and firmly united; common splints applied; general health much improved. He continues to take the bark, wine, porter, &c.

On the 18th of January, the abscess having been healed up for some days, and the leg being quite strong, he was discharged cured.

N.B.—During the period at which he was taking the opium the bowels were not more confined than they would probably otherwise have been, and were easily acted on by ℥ss. of *haust. sennæ*. On leaving off the opium he had a diarrhœa, which was restrained by the usual remedies.

## EDINBURGH ROYAL INFIRMARY.

*Enlargement of the Knee—Abscess communicating with the Joint—Poultices and rest, followed by the application of plaisters and bandaging—Recovery.*

ROBERT WATSON, æt. 11, admitted under the care of Mr. Liston, February 4th. The right knee is enormously swollen, and the motion of the joint is almost entirely gone, the limb being in a state of semiflexion. The swelling is globular, soft, and elastic, and is the seat of frequent and acute pain. On the outside of the joint there is a narrow aperture, discharging thin purulent matter. His health is considerably impaired; Pulse 120; bowels regular.

States, that about fourteen days ago he sustained an injury of the knee by falling on a sharp pointed body; that this was followed with acute pain in the joint, and considerable swelling; and that an abscess formed and burst, giving rise to the above-mentioned fistulous aperture.

5th.—On introducing a probe, the opening is found to communicate with a large abscess, which evidently extends into the cavity of the knee-joint. The aperture was enlarged, and an incision made into the most prominent part of the swelling on the inside of the knee.

Poultices were afterwards applied, and the limb kept in a state of complete rest. The purulent discharge was at first profuse, but gradually diminished, and was followed by the escape of a considerable quantity of synovia.

On the 16th all inflammatory symptoms had abated, and the discharge had almost entirely ceased, but the swelling still continued to a very great extent. The knee was surrounded with plaister, and bandage, according to the plan of Mr. Scott, and a wooden splint was placed on the posterior part of the joint, in order to extend the limb.

On the 19th the dressings had become slack from diminution of the swelling; they were therefore removed, and similar ones applied.

By the 22d they had again loosened, and were reapplied. The swelling was found to be much diminished; the wounds on the inner side of the joint were nearly closed, and the limb was considerably extended.

March 12th.—The knee is now of the same dimensions as the other; the wounds have healed completely; and the patient enjoys the free use of his limb. Dismissed cured.

This case has been selected as an example of the speedy and satisfactory cure which in certain cases follows the above mode of treatment.

*Melanotic Tumor of Eyeball—Extirpation—Cure.*

John Maxwell, æt. 52, admitted under the care of Mr. Liston, February 16th. Enjoys no vision with the left eye. In the outer canthus are two small prominent tumors, of a shining appearance and black colour, appearing to be covered merely by the attenuated conjunctiva. A dark-coloured tumor also appears in the interior of the eye, not far distant from the cornea; the lens is opaque. The eyeball is somewhat protruded. He complains of slight pain in the eye, not constant, and of a lancinating kind.

States that the disease has been of about two years' duration, that he has never experienced much pain in the eye, and that its vision was lost at an early period of the affection. The cornea had ulcerated and the humours been discharged, but the aperture closed and the aqueous humour was regenerated.

17th.—To-day Mr. Liston removed the contents of the orbit, by means of a volsella and a straight bistoury. The hæmorrhage was very profuse, but was completely arrested by firmly and quickly stuffing the cavity with charpie, and retaining graduated compresses by a tightly applied bandage.

On examining the removed mass, several melanotic tumors, of the size of peas, invested by a delicate membrane, and of a shining appearance, were found embedded in the cellular tissue exterior to the ball of the eye. On making a section of the ball, melanotic matter was found extensively deposited in the posterior part, so as to form a firm solid tumor, leaving no trace of the retina and vitreous humour, and pushing forward the opaque crystalline lens into almost immediate contact with the cornea. The sclerotic coat was considerably thickened, and the surrounding cellular tissue much consolidated. There was great atrophy of the optic nerve, it being diminished in size, of a flattened form, and its neurilemal covering very loose.

18th.—Has passed a good night, and is free of complaint, except of slight pain in the wound. Pulse natural.

22d.—Has continued to do well. The wound has been dressed daily since the 20th, the charpie having been gradually removed. Purulent discharge from orbit, not profuse.

On the 26th, an attack of erysipelas occurred around the wound, and extended to the face and scalp. It was, however, subdued in the course of a few days, by the employment of punctures and warm fomentations externally, and of the solutio tartratis antimonii internally.

Afterwards no untoward symptom occurred, the orbit gradually filled with healthy granulations, and the patient was dismissed free of complaint on the 18th of March.

## FINAL ABANDONMENT OF THE INTENDED DINNER—PROPOSED MEDICAL "ASSOCIATION."

*To the Editor of the London Medical Gazette.*

SIR,

I DEEM it expedient to acquaint you, and through the medium of your journal the medical public, that the stewards of the intended public dinner, judging from the paucity of the number of gentlemen who signified their intention to dine with them, that it was not a popular measure, have separated, and do not intend to resume their duties.

The stewards dined together on Saturday, to meet those gentlemen who might not have had notice of the postponement, and about twenty persons assembled. One of the intended objects to have been proposed at the dinner was attained at this small meeting,—the formation of an association, entitled "The Association of the General Medical Practitioner." As little else was done but giving the name and electing the officers and committee *pro temp.* I am enabled only to furnish you with a sketch of the general intentions of the Association. The first object is to bring general practitioners more directly in communication with each other, for information and for co-operation in any measures that may enhance their respectability, and be for their mutual benefit; embracing the most desirable of all objects—a fair and proper mode of remuneration, free from the trammels of trade, and enabling us to exercise our department of the profession with pleasure and credit to ourselves;—to form a Medical Society, and also a Journal, to publish the papers read and discussed at this Society;—to establish a fund to carry into effect the general measures, and to enable us to afford relief to the needy of our profession, and their dependants.

These, sir, are the chief principles of the society; and, I think, they are fair and legitimate objects—such as must meet the approbation of all our medical brethren. As I have not the permission of the gentlemen who subscribed their names to the Committee, to publish them, I cannot furnish you with them. I beg to say, however, that they are members of the profession, of whose acquaintance I feel proud.

I am, sir,

Your obedient servant,

JOHN LAVIES,

One of the late Stewards.



# THE LONDON MEDICAL GAZETTE,

BEING A  
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SATURDAY, MAY 15, 1830.

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## LECTURES ON SURGERY,

*Delivered at St. Bartholomew's Hospital,*

BY WILLIAM LAWRENCE, F.R.S.

— Nov 149.  
LECTURE XL.

*Chilblain—Onychia and Paronychia—Nævi.*

THAT peculiar inflammation of the skin, gentlemen, which is called in English *chilblain*, arises, as the name implies, from the action of cold upon the surface of the body, the affected part being *chilled*, or having the temperature reduced: the Latin name is *pernio*. As this is the result of the action of cold, it takes place in those parts of the body in which the circulation is the most feeble, that is to say, in those most remote from the heart—the fingers and toes, the heel, the extremities of the ear, and even of the nose. It also happens most frequently in young subjects, in whom the organization has not yet attained its full vigour, or power of resistance, to external influences. When I say that this arises from the application of cold, you must understand that it is not immediately produced by cold; it is necessary that the temperature of the part should be reduced by the application of cold, and that it should be subsequently heated; that there should be an alternation of heat and cold: it is in these circumstances that the origin of chilblain is to be found. Indeed, in general we observe that chilblains do not happen during the period of most intense frost; they are more frequent and more troublesome when the temperature of the atmosphere begins to be rendered milder by the subsequent thaw. It was observed by Larrey, in the winter campaign of the French in Russia and Poland, that for a few days before, and for a few days after the battle of Wagram, the thermometer was very low, from ten to fifteen degrees below zero—an intense cold; and yet during that time

there was no mortification, nor did any other particular suffering about the hands or feet occur. But about two days after the battle a thaw took place, the thermometer rose from eighteen to twenty degrees, and then a great number of cases of mortification of the feet occurred in the army in some particular divisions that were very much exposed, and nearly all the soldiers suffered more or less.

These circumstances lead us to the modes by which the occurrence of chilblain may be obviated. In the first place the extreme parts of the body in which there is a liability to have them chilled, should be warmly clothed. In the next place, when any part, such as the hand or foot, has been chilled, it should not be immediately exposed to that high temperature which the feeling of cold inclines persons to wish for at the moment: the hands or feet, for instance, should not be plunged in warm water, nor brought near the fire; on the contrary, means should be taken to restore the circulation gradually. The principal means of prevention consists in preserving the part from vicissitudes of heat and cold.

The affection which we call chilblain exists in various states—there are, in fact, different degrees of it. In the first, or milder form, we have simple inflammation of the skin—what nosologists call *erythema*, that is, mere redness and vascular congestion, without heat in the part;—there is, to be sure, connected with this some degree of effusion into the subjacent texture: thus the part is not only red but rather swelled. When the affection is very active, we find this is usually so considerable that the motions of the part are impeded. In the fingers, for instance, the whole of them may be so much swelled that the individual can hardly use them in writing, or in his ordinary occupations. There is a great sense of heat, a most troublesome itching and tingling, in conjunction with the redness and swelling;—these are the early symptoms of chilblain. Now the heat and itching are not constant during the

twenty-four hours; there is generally a particular period, as towards the evening, when the parts become warm, and then the heat and the itching are more particularly troublesome.

In the more active state of chilblains, relief of the heat and itching will be produced by cold applications of various kinds, but as people are possessed with the idea that chilblains are produced by cold, they do not like to use them; and common experience has established the fact, that applications of a stimulating kind are advantageous, and a great variety of these are popularly employed. Camphorated spirits, soap liniment, oil of turpentine, strong solutions of salt, and a variety of other stimulating things of that kind, are employed to rub the inflamed part, and with considerable benefit. The most effective application of this kind that I am acquainted with is one recommended by Mr. Wardrop, in a short paper that he has written on the subject of diseases of the toes and fingers, contained in the fifth volume of the *Medico Chirurgical Transactions*. It consists of six parts of soap liniment and one part of tinc. Cantharidis, with which the parts are to be rubbed two or three times in the twenty-four hours, and this generally removes the troublesome sensation of heat and itching.

In this condition of the chilblain we do not always find the part of a vivid red, but frequently find that the skin is very livid, of a dull leaden appearance, exhibiting in the colour a proof that the capillary circulation is very imperfect. After the inflammation has existed for some time, vesication will occur, and the skin will ulcerate, and this is the state which, in popular language, is called "broken chilblain." The cuticle becomes elevated into a livid or brownish vesicle, that is, there is a thin serous fluid, of a livid or brownish colour under it, and when this breaks the skin is observed to be of a dark or livid hue; it soon ulcerates, and the ulcer that is thus formed is of an unhealthy, unfavourable appearance, and particularly slow in healing. It has a greyish or brownish ulcerated surface, sometimes with bloody points interspersed, and with livid edges and surface, in which we see merely the existence of ulcerative absorption, without any attempt at repair. A soft poultice is the best application in the first instance to an ulcerated chilblain; and subsequently, in order to promote the restorative action, which is very deficient, you must employ local stimuli, and the two best are red precipitate, in the form of ointment, and nitrate of silver, in the state of solution.

There is a third and more serious effect of this kind, in which a part of the skin actually loses its vitality, and is converted into a slough. When a considerable part of the body is exposed to considerable cold you

have this effect—this sloughing extending to the whole of a member. The treatment here falls under the general principles that I mentioned to you in speaking of mortification.

#### *Onychia and Paronychia.*

Inflammation occurs sometimes (generally in consequence of injury to the integuments) at the extremity of the fingers or toes, and in their dorsal aspect at origin to the nail, and this has been technically called *onychia*. *Onyx* is the Greek word for nail, and *onychia* is inflammation of the part which forms and secretes the nail. This affection is attended with the formation of matter under the fold of the cuticle, which is reflected from the semilunar termination of the skin, and passes over the nail. Now this detachment of the skin from the root of the nail destroys it, and renders the formation of a fresh one necessary. The formation of matter sometimes extends under the nail, generally so that it becomes detached, and is no longer held in its situation except by its connexion with the cuticle at its circumference. In this state you easily detach it without giving pain to the patient, and this allows the new nail to form.

Matter may form in various parts about the nail, not immediately in the situation that I have mentioned to you, and these formations of matter are sometimes called *paronychia*:—*para* means near; *paronychia* means a formation of matter near the nail; it has also been called *panaris*, and by some writers, *panaritium* in Latin; and which, in English, is termed *whitlow*. In fact, there is no essential distinction between the several names of *panaris*, *onychia*, *paronychia*, *panaritium*, and *whitlow*; they merely designate inflammation about the nail, or its neighbourhood.

When the integuments by the side of the nail become inflamed, either in consequence of being wounded, or from any other cause, and the cuticle is separated, which it soon becomes, it often happens that considerable pain and local inflammation are produced by the pressure of the hard edge of the nail against the denuded part of the skin. Under such circumstances it is not uncommon for a fungus to arise in that part of the skin that is the constant subject of this mechanical irritation; and in the various offices for which the fingers and toes are used, the part becomes pressed upon, so as to occasion a constant recurrence of pain. Thus great inconvenience is experienced from an apparently trifling cause; and under such circumstances it is expedient to introduce carefully, with the end of a probe, a fine thin piece of lint, which we commonly call the flue of lint, between the edge of the nail and the inflamed part of the skin on which it presses, so as to prevent the mechanical irritation,

and in that way you generally remedy the inconvenience. In the great toes of the feet a similar, but much more aggravated state of things, frequently arises in consequence of the pressure of tight shoes. The soft parts which are seated at the side of the nail, particularly on the inner side of the great toe, are pressed against it by a tight boot or shoe. They become irritated, inflamed, and thickened; and from some slight external injury a higher degree of inflammation is produced; matter forms; the skin becomes deprived of the cuticle, and then the same production of fungus that I have already mentioned arises; and this goes to such an extent that a considerable part of the nail towards the outer edge, and sometimes towards the inner edge also, is completely imbedded in it. This is what is called, in common language, the nail growing into the flesh, and what the French call *Pincarnation d'ongle*, which is a very similar expression.

Now a notion has been frequently entertained, that the state which I have just alluded to arises from some malformation or wrong direction of the nail; and thus the first curative efforts have generally been directed towards relieving or getting rid of the nail, or giving it what is considered a more proper direction. As these efforts proceed entirely on a wrong view of the cause, we cannot wonder that they fail to afford relief. The truth is, the nail is not at fault in these cases; the evil arises from pressure of the soft parts against the nail, and it is simply a state of things produced by mechanical irritation, from the constant pressure of the hard nail against the inflamed skin. A great point therefore, of course, whatever else you do, is to keep off the source of mischief—not to wear any covering that is tight, or produces pressure. In many instances, particularly those not of the worst kind, you can put a stop to the affection by simply attending to what I have mentioned, namely, introducing under the edge of the nail carefully, from day to day, or every two or three days, a portion of the soft part of lint. When you do this, you will understand that your object is to introduce simply a soft substance between the nail and the skin; and therefore you are not to use a considerable quantity of lint, and push it in forcibly, because that is likely to add to the mischief, but merely to put a bit of the softest part of lint gently under the edge of the nail, so as to prevent the source of irritation. Then, if you take care that the shoe is loose and easy, you generally find that this simple mode will remedy the inconvenience. There are instances, however, where the evil is too considerable to be got rid of in this way, and where it is found necessary to take away a portion of the nail; after which you can remedy the state of irritation and the fungus

of the skin: the nail which is reproduced will now take a proper direction; and the cause being removed, if you take care that the person does not wear tight shoes, the evil will not recur. Dupuytren recommends removing the part of the nail which presses upon the skin by means of a pair of scissors. The mode he recommends is this—to have a pair of pretty strong scissors, one part of which should be quite sharp; you put the sharp point under the edge of the nail, and then, by a quick motion, you carry it along the nail—that is, you thrust the sharp point under the nail where you wish to cut it through; and having cut it, you take a pair of strong forceps and tear off that part of the nail. This seems rather a rough mode of proceeding; however I have done it, and it is not found to be very painful—the pain is merely momentary. When you have thus got rid of the mechanical source of inconvenience, you probably find that the fungus and the thickened state of the skin will subside of themselves; if not, you may rub it gently with lunar caustic, and in proportion as the nail springs up again, you must pay some attention to see that it takes a proper direction. Now I am told there is another mode of taking away a portion of the nail that is equally effectual, but is not done in the same coarse and painful manner. Mr. Wardrop has informed me that a surgeon who resides at the west end of the town, and who practises particularly on the diseases of the nails, has observed that the nail rests in a bed of dense cuticle, and that therefore you can cut through the nail without actually cutting the *quick* so as to draw blood. The object is to make a perpendicular cut with a sharp instrument, something like a sharp penknife, through the nail; and then, he says, you can lift it out very easily from the bed of cuticle without giving pain, while you afford immediate relief. Of course, if you can do this, it is a more eligible mode of accomplishing the purpose. The mode by which people attempt to ease themselves, is by cutting away a piece of the edge of the nail; and certain methods have been proposed surgically for introducing a plate of metal under the edge of the nail, and by that means prevent it from pressing upon the skin. This notion is not at all founded upon a just view of the nature of the affection; and, I believe, is more calculated to add to the suffering of the patient, and to increase than to remedy it. Then, when the evil is remedied for the time, you prevent its recurrence by attending to the following circumstance:—The nails of the fingers are generally cut so as to form a semi-circular edge; but where the nail of the great-toe is affected in the way I have mentioned, it should be cut square—you should not cut away the angles. Thus the evil of allowing the nail to grow into the part is got rid of.



*Nævi Materni.*

Under the name of *nævi materni* are included various original deformities or peculiarities of the structure of some portion of the skin. The name *nævi materni*, which means simply mother's spots, is founded on the generally received notion that those peculiarities in the skin arise from some influence of the mind of the mother on the offspring. It has been supposed, for instance, that if a pregnant woman is terribly frightened by any strange sight, that the skin of the child will probably bear some mark on the body more or less allied to the object that has produced this terror. Or, again, if a pregnant woman should take a strong desire, or, as they sometimes call it, a longing for any thing, especially if the longing cannot be gratified, there is an idea that this object will be marked upon the child. Thus, if we may believe mothers and nurses, the objects that I am now going to speak of are only so many representations of things, whether of food or any thing else, that the mother has been longing for; whether it be beef or pork, raspberries or grapes, or the Lord knows what. This idea seems to be very prevalent: the same appearances are called in French *envies*, which means mother's longings;—the name they bear in German is the same—*mutter-mahl*, mother's spots.

We sometimes find an elevation of the skin, an irregular figure, of a rough granular surface, generally reddish, or brownish, or yellow, but varying in point of colour, and not uncommonly having on it particularly long hairs. These have been called in common language, *moles*; and they generally remain throughout life of their original size; they do not increase. It might happen that a mark of this kind was so situated as to produce a deformity; and if it is necessary you can remove it, the operation of extirpation being a very simple one. There are some instances of these elevations of the skin growing after birth, and attaining a large size, of which this specimen is an example.

[Mr. Lawrence here presented a preparation, observing, "this was cut from the lower part of the back of a lady, then an adult. It had been a 'mark' originally, and I do not know that I can give it any other name than that of a huge mole. It measures about one foot in length, and is about one foot in breadth. It had a bright red appearance during life. It was removed by Mr. Abernethy, and I assisted him in the operation, many years ago. It did not go deeper than the skin—this is the adipose substance under it."]

Sometimes a part of the skin is brownish, or reddish, and thickly covered with hairs, like the coat of an animal. A little time ago, I remember there was a boy in the

foul wards. I had him stripped to examine some syphilitic eruption. There was a part on the chest, about two inches one way and one inch the other, of light brown hair, like the coat of an animal. I looked at it, and said, "What is that on the chest?"—"Oh, sir," said he, "it is a mouse." I said, "it is not a mouse—it has no tail."—"Ah," said he again, "it had a tail, but somebody cut it off." I saw a curious looking child, a little time ago; a gentleman sent for me to see it as a curiosity. I think that a great part of the body was covered with hair. Over the lower extremities there was a great number of spots; one on the arm, and others on the trunk of the body. The skin covering the child, in other respects, was of the natural texture, and, indeed, these parts were not unhealthy.

In the greater number of these *nævi*, however, there is an unnatural state, particularly of the vessels of the skin. This peculiarity seems to consist more or less in the vascular tissue of the part. Sometimes you have a few vessels enlarged and ramifying superficially in the skin—sometimes giving not an inelegant kind of appearance. This has been called *spider nævus*—the ramifications bearing some analogy to the legs of a spider. Not uncommonly, you see parts of the skin discoloured—red, brown, or livid; sometimes of a deep tint, sometimes lighter, and this extending irregularly over a considerable part of the skin—very frequently on the face. These are commonly called *claret marks*, the colour being something like the stain produced by claret. You often see large vessels ramifying quite on the surface of the skin, and in some instances of that kind I have known individuals liable to occasional bursting of these vessels, and to very copious hæmorrhage from them. But these marks I am now speaking of generally are of a *stationary* kind; they do not increase; they remain in the same state through life. The *nævi* which are most commonly the subjects of surgical treatment, consist of peculiar vascular growths seated either in the skin itself, or in the adipose tissue immediately under it. The *cutaneous nævi*, or those seated in the skin, consist of a soft bright scarlet elevation, the surface of which is finely granulated. They appear to occupy a certain portion of the texture of the skin, as if a part of it were stained with this bright scarlet colour. It is really rather an elegant sort of texture which occupies the place of the natural structure of the skin; it is generally of a more or less circular figure, not rising high above the natural elevation of the skin. The *subcutaneous nævi* consist of soft swellings seated under the skin, imbedded in the adipose tissue, the skin itself being completely sound over them. Towards the centre of the *nævus*, you have more or less of a blue or livid appearance. It seems as

if some of the vessels were running out of the *nævus* to approach nearer the surface of the skin in the centre, so that you have a blue, or livid, or black discolouration in the centre, and a tumor extending in circumference under and much beyond the sound skin, in the cellular membrane beneath. This is quite a soft tumor. Not unfrequently, you have a portion of cutaneous *nævus* in the centre, and part of a *subcutaneous* tumor extending under it; so that, when we speak of cutaneous and subcutaneous *nævi*, you are not to suppose that they are so essentially different in their nature that they cannot be combined together. You have in these *nævi* one part which is a bright scarlet soft state of the skin, and another which forms a tumor under it. Both these kinds of swellings are soft and compressible; in fact, if you press upon them, you find that you diminish their bulk—that you squeeze something out of them; and when you remove the pressure, they slowly recover their former size. Sometimes they are rather firmer than the rest of the skin, and there is a sensible increase of heat in them.

These *nævi*, like the others that I have mentioned to you, may remain stationary—that is, you see them of a certain size at the birth of a child, or they acquire a certain size soon after, and then do not grow further. More commonly, however, they are small at the time of birth, and begin to increase, and often grow very rapidly for some time. With respect to those that are permanent, they do not always remain in the same condition. There are certain changes, according to the state of the system and the particular circumstances affecting the individual, so that growths of this kind will sometimes be more full and tense, the vessels being apparently more filled; at another time they are paler and more flaccid. There are the cutaneous *nævi*, which are sometimes compared to strawberries, raspberries, and so forth; and really the simile is not altogether inapt. I have many times been seriously told, and that by well-informed persons, that a certain mark on their daughter's back, which they call a raspberry, increases at the time that fruit comes in, and gets larger and generally redder by the time that raspberries are ripe. It then withers, shrinks, and disappears every year. It is these changes in the state of the *nævus* which have given rise to, and may support, this notion.

I mentioned to you that these *nævi* are usually small at the time of birth, and often, perhaps, so trifling as to be overlooked till some time after. Then they begin to increase in size, and grow rapidly. Thus you may see them of the size of a pin's head, or of the whole hand; indeed there is hardly any limit to their growth. They are most common on the head; frequently they are found on the scalp, and upon all

parts of the face; and sometimes they seem to occupy nearly the whole of a part—such as the ear, the eyelid, or the lip. I remember seeing the case of a young woman, at this hospital, where half of the lip and the corresponding part of the side of the face seemed to be entirely filled with this unnatural growth. It was covered by the skin externally, and by the mucous membrane of the mouth internally. These *nævi* are sometimes seated about the neck, often extending deeply;—they are more rarely seated upon the extremities of the body; sometimes they are found upon the trunk.

Those that grow consist essentially of large vessels near the surface, and it will happen frequently that these vessels will give way. They are liable to be ruptured by accident, and thus profuse hæmorrhage will take place, or sometimes, after attaining a certain size, a state of ulceration and inflammation comes on, and this ulceration, if it become extensive, will frequently destroy a considerable part of the morbid growth, and lead to a kind of partial natural cure of the affection. I have mentioned to you that pressure will diminish the size of the *nævi*, and that they recover their former magnitude when the pressure is removed. This effect is produced by squeezing the blood out of them; for what they contain, which is thus removed by pressure, is blood—and moreover it is arterial blood. In the cutaneous *nævus*, which is quite on the surface of the body, and where the vessels are covered only by a thin kind of cuticular integument, you have a bright scarlet tint, shewing that it is arterial blood. If the blood be in a deeper seated tumor, with a great thickness of integument over it, the colour is blue or livid, so that you might suppose that it was produced by venous blood; but you find, if you come to cut into such *nævi* in operations, that it is arterial blood which flows from them. I may mention to you, which is a further evidence of what they contain, that if an incision be made in operating—if you cut into any part of one of these growths, arterial blood flows out in a quantity and with a degree of violence that you can hardly imagine; and which you would scarcely believe possible unless you saw it. A copious stream of the most florid arterial blood comes out, and you cannot restrain it unless you press firmly on the whole of the surface that is injured by the incision.

When you come to make a section of a tumor of this kind after removing it, it exhibits a cellular appearance, and the general notion has been that it is made of cells, with large vessels ramifying through, and depositing blood in these cells. Now I believe this notion of the cellular structure of these *nævi* is not a correct one. So far as I have observed when a section is made, the apertures that are seen are the mouths of blood-ves-

sels; they are all regularly circular, with a smooth lining, like that of the blood-vessels. They appear to me, therefore, to consist essentially of an aggregation of vessels ramifying and combining together into a kind of tumor. Whether they be arteries or veins I do not undertake to determine, but I can only say that during life they appear to contain arterial blood, and when you cut into them, florid blood flows in the greatest profusion. Hence the name that is sometimes popularly given is by no means a bad one—*bloody tumors*, and they are described by Boyer under the title *tumeurs variqueuses*, which is the same as our popular term, and both of which designate that they depend materially on bloodvessels. Dupuytren has turned his attention to the structure of these *nævi*, and his idea is, that they consist of the same kind of texture which is found naturally in certain parts of the body. Thus there are certain parts in which you find that the structures are usually flaccid, but which admit of distention by an increased influx of blood; they admit of the state which has been called *erection*, and the structure has been called by the French *tissue erectile*, *erectile tissue*, like that of the penis, the clitoris, the nipple of the female, and some other parts. Dupuytren considers that these *nævi* are unnatural productions of erectile tissue in the parts in which they are found. Hence he has called them *tumeurs erectiles*. There are some points of analogy between these *nævi* and the erectile tissue, but I must observe that we do not know quite enough of either of these two tissues thus compared to be prepared to assert or to deny their identity. I would observe, however, that this kind of structure not only exists as a congenital production, but may take place as an accidental formation after birth in various parts of the body. Under such circumstances, the tumor, although perhaps not precisely corresponding to the description that I have given to you, has, in many cases, another character, which is very important—that of pulsation,—having a pulsation synchronously with that of the arteries. This is a circumstance which I have not observed in *nævi materni*, that is, in the congenital kind, and certainly does not exist in the greater number of them, though it has been sometimes observed. Dupuytren has alluded to it; he speaks of these tumors generally as having some pulsation. This is the affection which John Bell calls aneurism by anastomosis, and others have done the same after him. Hence it has been supposed that the congenital marks or *nævi* are of this nature; but as I mentioned to you, they do not possess that particular feature upon which Mr. Bell founded his opinion, namely, pulsation, nor can these same growths be correctly denominated aneurism, for there is no kind of

analogy between vessels inosculating with each other as these do and that affection of the arterial trunks which we call aneurism.

The same principles of *treatment* are applicable to this affection whether it exists congenitally, as *nævus maternus*, or whether it is an accidental production taking place subsequent to birth.

If *nævi materni* be stationary—if they do not increase in size, there can be no reason for interfering or meddling with them, unless they be so seated as to be a source of deformity; and as they are frequently found on the face, it may become desirable to remove them on this account, independently of the various mischief to which their increase might lead. A variety of methods have been proposed for dealing with these *nævi*, when it is wished to reduce their size or to take them away altogether. Mr. Abernethy has given some observations on this subject. He observed the circumstance of their being occasionally of a higher temperature than the rest of the surface of the body, and therefore thought that if cold applications were used, so as to reduce the temperature, and then the part was subjected to pressure, they might be removed in that way. He mentions a case where an extensive *nævus* on the fore arm of a child was thus reduced. It must be observed, however, that we generally have to treat those that are seated on the face and head where pressure cannot well be applied; and besides, pressure is sometimes found to irritate them, and make them grow faster rather than to diminish them.

Excision is an obvious and at all events an effectual mode of getting rid of these affections. In cutting them out, you must observe the rule of taking away the whole of the unnatural growth; you must cut into the sound parts all round; you must not proceed economically, nor be inclined to save either skin or any other part in which any portion of this production may exist, because if you leave any thing behind, you have the growth reproduced, and if you cut into it in operating, you will have such profuse hæmorrhage that unless you saw it you would not think possible. You must cut freely in the circumference in the sound parts, so as to take away all the morbid growth, for although you have a good deal of hæmorrhage even in this way, yet you will not have that furious bleeding which results if you cut into the tumor. Very commonly in extirpating them, you have a degree of hæmorrhage which makes you think for the moment that the child (if the operation be performed on an infant) will die from the loss of so much blood. I may mention that the operation of excision on this account is in some measure limited to *nævi* of a moderate size, for when the operation is performed on those of large size, there is really danger of immediate death



under the knife, from hæmorrhage. Mr. Wardrop took away a large nævus from the back of an infant; he took it away as quickly as he could, but it was one of considerable size, and there was a most profuse bleeding from the whole of the divided surface, and in about one or two minutes the child was defunct. On coming to examine this nævus, which he had so removed, one of the vessels that was opened was found to be of calibre enough to admit the largest writing quill. When you consider that the whole surface, perhaps, is covered with these vessels, and see how freely they emit their blood, you cannot wonder at such an occurrence.

In order to avoid the danger of hæmorrhage from the use of the knife, it has been proposed to tie these tumors,—to surround the base with a ligature, and draw it very tight, so as to produce mortification of the included part. In general the bases of these tumors are too large, and they are too little prominent to admit of surrounding them by a single ligature, but you pass under the base a strong needle with a double ligature, and when you cut off the needle you have two ligatures, which are to be tied one each way, so as to surround the base by two ligatures, each of which incloses one half. This is an effectual mode of preventing the danger of hæmorrhage. You might suppose that when the ligature surrounds a nævus of considerable size, and includes a large mass of integument, that this mode of proceeding might be liable to much inconvenience. I have operated, however, in a considerable number of cases, where the nævus was of considerable size, and I have in no instance seen inconvenience arising from the employment of the ligature. I have used it in cases where the nævus was so large that I dared not to extirpate it with the knife, and the operation has been successful, so that the proceeding seems to be a very safe one.

It has been proposed in nævus, as in aneurism by anastomosis, to prevent the growth of the tumor, and to produce its reduction, by tying the arterial trunks that feed it. Now in general we find that the vessels seem to come into them from all quarters, so that it is very difficult to do this. However, this has been more particularly attempted where the nævi have been seated upon the head, and where the carotid artery could be tied. Mr. Wardrop performed the operation of tying the carotid artery in a child for a large nævus on the head. This seemed to produce a considerable reduction in the size of the tumor; the child, however, was enfeebled and in a reduced state in consequence of partial ulceration and loss of blood from the nævus, and died more from that than from any other cause; so that in this case the effect of tying the artery could not be well estimated. In consequence of

this case of Mr. Wardrop, tying the carotid artery was tried by Dupuytren in a large nævus situated about the ear, and including the whole texture of the surrounding parts. By pressure on the carotid artery it was found that the size of the nævus was reduced, and that it became flaccid. Hence the natural inference was, that if the artery were tied, the nævus would be reduced in size. Dupuytren tied the common carotid artery, and for a few days the effect of the operation seemed to correspond with the wishes of the operator; the tumor became flaccid, but it soon swelled in size again, and after a little time it grew as fast as ever, so that in fact, according to the experience that we have at present, the plan of tying the arteries that go to these nævi, or the main trunks of the vessels which supply the part of the body in which they are situated, cannot be much relied on.

I remember a case of aneurism by anastomosis, seated on the finger of a young girl, on whom Mr. Hodgson operated. This was not a nævus—this was a production of the vascular kind, that came subsequently to birth, and formed a considerable swelling, occupying a great part of the finger, with a strong pulsation in it, and a degree of heat, not only in the finger, but in the whole hand. Mr. Hodgson tied the radial and ulnar arteries in that case, having first pressed upon them to see the effect, and having been satisfied that doing this materially reduced the tumor and stopped the pulsation. This operation was attended at the time with an interruption of the pulsation, and a reduction of the swelling; but the effect was only temporary, and, in fact, this girl suffered so much, that she wished me to do any other kind of operation that I could think of for her. I accordingly subsequently cut round the base of the tumor upon the finger—that is, I cut round the tumor between its basis and the hand, so as to divide the whole of the soft parts except the flexor and extensor tendons—and in doing this there was a pretty considerable hæmorrhage; for of course there was a necessity that all the enlarged vessels should be divided. This had the effect, I will not say of removing the tumor, but certainly of arresting its growth. I may mention that a question was entertained, if the skin were cut circularly round, and all the soft parts were divided except the tendons, whether or not mortification would occur. However, when I divided the vessels (I may mention that one of the digital arteries was as large as the radial artery), the arteries at the distal extremity, coming from the point of the finger, bled so freely, that I was obliged to tie some of them. The circulation in the small vessels, along the periosteum, proceeded in such a manner as to be quite sufficient to sustain the vitality of the parts.

Then another principle of treatment for these nævi, where you do not like to extirpate them, or the application of the ligature may be impracticable (for sometimes the figure and situation of the nævus are such that a ligature cannot be applied), consists in a kind of attempt to imitate the process of natural cure, which I mentioned consists in an accession of inflammation and ulceration, sometimes leading to partial sloughing of the tumor. It is the application of caustic to the tumor. Mr. Wardrop recommends an application to the centre of the tumor of a portion of potass, or rubbing the tumor thoroughly with the nitrate of silver; but the potass is the most effectual. He says it will produce a certain degree of inflammation at one part of the tumor, like the natural process, and that this will diffuse itself over the whole of the texture; and thus you will get rid of a nævus which is too large to attack with the knife. Not long ago he sent me a patient to look at, with a large nævus on the neck, which he thought too large to admit of being treated by excision or ligature. He applied caustic in the way that I have mentioned. The cure is going on favourably; and he has employed it to another, which is also going on well. At all events you know from this that the caustic may be safely employed in cases of this nature.

Another method lately proposed, and which in some instances has been adopted with great success, is that of vaccination on the nævus, in children who have not previously been the subject of the vaccine disease. You introduce the vaccine matter at points all over the nævus, and round it, so as to produce a considerable degree of inflammation in the textures. I have tried this in two or three instances: in one case with complete success—in one case with partial success; and I have seen an instance lately where it has entirely failed, although the nævus was not large, and I was obliged to extirpate it. It was seated on the scalp.

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## ANALYSES & NOTICES OF BOOKS.

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“L'Auteur se tue à allonger ce que le lecteur se tue à abréger.”—D'ALEMBERT.

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### FEVER.—ART I.

*A Treatise on Fever.* By SOUTHWOOD SMITH, M.D. Physician to the London Fever Hospital. London, 1830. Longman and Co.

*Clinical Illustrations of Fever; com-*

*prising a Report of the Cases treated at the London Fever Hospital, 1828, 1829.* By ALEXANDER TWEEDIE, M.D. Member of the Royal College of Physicians of London, Physician to the Fever Hospital, &c. &c. London, 1830. Whittaker and Co.

WHEN we took up Dr. Smith's work, for the purpose of critical analysis, and read the comprehensive title, “A Treatise on Fever,” we would willingly have retired from the task, as from a laborious undertaking which promised but little reward; but in glancing through the book, we found the author had treated only of the epidemic, or common continued fever of this country, which, although sufficiently extensive as a subject in itself, is nevertheless more within our grasp. Works on fever do not in general excite great interest—the regard they meet with is of a passing and transitory nature, and yet, in the face of so great discouragement, there have not been wanting, at every period, zealous and able men, who have stood forward in the cause of science, sacrificing their time, their health, their life, in the investigation and contemplation of this scourge of the human race—fever.

If there was wanting testimony to shew the foremost place which fever holds in the science of medicine, it would be found in the long list of celebrated men of modern times who have bestowed upon it their particular attention, as well as in the train of great characters who have lived through all antiquity. Nothing but a conviction of the necessity of a knowledge of fever, as the groundwork whereon to erect a stable fabric of the science of medicine, could have enlisted so much talent and commanded so much labour, which, although not yet repaid by the successful attainment of the desired object, has nevertheless drawn together a mass of evidence that will ensure the respect and facilitate the researches of all future inquirers.

We are not of those who view the subject of fever with despair, or who think the time far distant when the doubts and difficulties in which it is involved will be cleared up and overcome. Much is already accomplished, and we look forward with confidence to the philosophic spirit and persevering industry of the present age to perfect the great remaining work. Hitherto a knowledge

of fever has been attainable only in part, because, from our defective acquaintance with morbid anatomy, we have not been able to trace its phenomena to their proper source, or to separate those conditions which supervene and are accidental from those which are essential and original. This great work of analysis, based on morbid anatomy, and conducted with a method of reasoning bordering on mathematical precision, is advancing successfully, and promises to substitute a sound pathology in place of vague conjecture.

The great doctrinal errors which have from time to time prevailed in medicine, owed their birth either to the reasonings of great minds on an incomplete series of facts, or to the extravagant speculations of a wild and ardent imagination; and these errors have obtained, in proportion as we have been ignorant of the structure and functions of the body in health and in disease; but as our knowledge of these particulars is improved, so will false theories be dispersed, so will there be furnished correct data for legitimate induction, in accordance with the Baconian principles of philosophy; and in no respect will these principles, we sincerely believe, enable rational medicine to achieve a greater triumph than in establishing the exact rank and relation of the phenomena of fever.

The Treatise first on our list is limited (if we except a few remarks on scarlet fever) to an account of the common continued fever of this country, and is divided into nine chapters. The author's object "is to ascertain the real phenomena of fever, and the most safe and effectual treatment of the disease;" as well as to carry into effect two important purposes in the establishment of the London Fever Hospital—namely, the accumulation of facts and the cautious trial of remedies. The author first gives a short account of the Fever Hospital, and of the ancient and modern doctrines of the nature and seat of fever. Then follow observations on the varieties and phenomena of fever, on the importance of analysis, on the organs and functions always deranged and diseased, on the distinction between fever and inflammation, and on the relation between the plague, yellow fever, &c., and the varieties of the fever of our own country; all which the author considers as varieties produced by dif-

ferent intensities of the same affection. Cullen's classification of fevers is handled with petulance and severity, and afterwards adopted. Synochus and Typhus are divided into mitior and gravior; and of these a further very questionable and perplexing division is added, according to the different organs in which the several affections have their seat. Hence synochus gravior with cerebral affection, subacute and acute; with thoracic affection, with abdominal affection, with mixed affection; and so also with typhus. The chapter winds up with a fierce struggle to prove the absurdity of the notion of debility, with which the author is sadly out of humour, and which he has taken great pains to keep out of view. To this succeed some remarks on scarlet fever; after which the author treats of the pathology of fever, and introduces an unnecessary number of imperfectly detailed cases in illustration. Next comes a chapter on the theory of the disease, in which there is much labour for originality, as, indeed, is conspicuous throughout the work. The causes of fever occupy the eighth chapter, and the last is devoted to treatment.

Our analysis of the two works placed at the head of this article will be separate, as we are desirous of paying an equal respect to both the authors, and more extensive than is our general custom, because we feel it our duty to give a full consideration to the works of physicians who have such an opportunity of studying fever. How far this opportunity has enabled them to add to our knowledge of fever, we shall by-and-by consider; but we may remark, *en passant*, that the novelty is rather in manner than in matter. Indeed the work of Dr. Smith is a very curious composition, and appears to us to be a close, though a studiously varied, imitation of a master whom he does not acknowledge. To this subject we shall frequently have occasion to return, in the progress of our analysis. Before we proceed, we must pause a moment at the title; which, with submission, we take leave to say is not appropriate to the contents. The generic term fever comprehends many varieties; Dr. Smith's work embraces only one—thus falling into a common but a fundamental error; and we scarcely need remark that this incongruity is not consistent with clear and comprehensive views.



As is too common, our author commences by drawing a dismal picture of the present state of our knowledge of the disease he is about to describe; and this opens a spacious field for a kind of display which we cannot but regret, disapproving of it as we must do in justice to those, his predecessors, whose labours deserve our approbation. After declaring our ignorance of the origin and propagation of fever, the difficulty of discriminating what are the essential symptoms, and what the adventitious, he says, "when we consider how few comparatively of the external appearances have been ascertained to be the sure and certain signs of any known condition of the internal organs, and how often the existence of several known conditions of the organs remains altogether unsuspected until the demonstration of it is afforded by inspection after death; and when, finally, on all these accounts we consider how vague the objects must be that are aimed at in the treatment; and consequently how uncertain, how indiscriminate, how fruitlessly inert, how perniciously active, how unsuccessful, how fatal, that treatment often is," &c. p. 2; it was not without surprise we perused the above, because we have at hand authority from which to adduce "sure and certain signs;" and it was not without regret that we found the remarks too well borne out by the author's cases, in which much unsuspected organic disease was found on dissection, as well as by his recommendation of a treatment which we cannot but believe "perniciously active."

Dr. Smith next glances at the notions of Hippocrates, Galen, and Sydenham, on the nature and seat of fever; and then, under "modern doctrines," gives a short abstract of the opinions of Cullen and Brown, as a prelude to those of Stoker, Burne, Clanny, Clutterbuck, and Broussais. It is an easy, though not a generous triumph, for men of the present day to expose the fallacy of doctrines formed in the infancy of science. Even great minds can reason only on what they know; and if we place before ourselves a correct picture of the data on which his reasonings were grounded, we shall find the opinions of Hippocrates less deserving of censure than those of some celebrated men of our own times. The quotation of Cullen's hypothesis of spasm, does

not appear to us apposite on the present occasion, referring, as it does, expressly to the proximate cause of the febrile paroxysm; a point which Dr. Smith does not take up, and which is in no way allied to doctrines of the seat and nature of fever.

The opinions of Stoker, Burne, and Clanny, are, as our readers know, in favour of the common continued fever being a general disease, in which the chief feature is a depression of all the powers of the body; while the opinions of Clutterbuck and Broussais are in favour of this fever being a local inflammatory disease. In commenting on these opinions, our author remarks—"As must necessarily be the case, these different and opposite theories are found to have the most important influence on the practice recommended by their respective authors in the treatment of the disease. The advocates of the first, deprecate all active interference; the grand evil to be contended with is debility. The physician can easily weaken, but he cannot strengthen; he can depress to any extent he desires, but he cannot communicate power as he wishes. In a malady, therefore, of which the very essence consists in loss of energy, the main duty of the physician is to husband the strength of the patient with the most anxious care; this being the chief means, as Cullen expressly termed it, of obviating the tendency to death. The important *inference* is, that every kind and every degree of depletion that can add to the primary cause of the malady, must be abstained from with the utmost caution. By the clearest and shortest deduction, this will necessarily be the result to which every mind must come that really believes that debility is the essence of fever, while he who admits its inflammatory nature must think it criminal to stand idle by, and allow the most extensive derangements in the structure of vital organs to proceed, without even an attempt to check them, as long as it is his in his power to use the lancet or to procure leeches." p. 27.

This extract offers one of the examples which we have already alluded to, of the exaggerated picture which Dr. S. draws of the opinions of others. Instead of giving an exact statement of the treatment recommended by the authors quoted, he *infers* that every kind and every degree of depletion must

be abstained from on the one hand, and on the other he *deduces* that blood must be abstracted as long as there is power to use the lancet or to procure leeches. Verily we are at a loss to know in what parts of the works of Stoker and Burne, or Clutterbuck and Broussais, the author will find his inference and deduction borne out; and we lament to see him allow his imagination thus to run riot. An advocate, or the writer of a romance, may give a colouring to his representations, but science demands exactness.

In the second chapter are discussed the definitions of fever, as given by nosologists, to all of which objections are made. The author speaks of Boerhaave's laborious analysis of the symptoms of fever, by which he reduced them to three—"shivering, frequent pulse, heat." To these Cullen makes the following additions—"languor, lassitude, and other signs of debility, together with derangement of the functions, particularly a want of vigour in the limbs, without any primary local affection."—"This extension of the catalogue (says our author) adds in no respect to the excellence of the generalization. It has all the vices which a definition can possess," p. 45. Here, again, Dr. S. treads in the steps of his unacknowledged master, imitating him in his abuse of Cullen; indeed the imitation is so close in every point, that there is scarcely a page in the work in which some opinion or expression does not bring Dr. Armstrong to our mind, although his name is so studiously kept back.

Now it is an injustice to so great a man as Cullen to suppose that he would run into blunders as palpable as Dr. S. would make them appear. The name of Cullen should, at any rate, be mentioned respectfully by our author, particularly when his own work may possibly afford as many examples of "vice" and inconsistency as are to be found in Cullen.

Before authors discuss a definition of fever, it should be settled what is meant by the term. Does it mean any given state; or any given disease; or any given stage of a disease?—because the definition must vary accordingly. If it means a given state, then there can be no difficulty; as it would be only to enumerate the symptoms of that state—as heat, accelerated pulse, with derangement of the functions; which is

a state of fever, occur in what disease it may. But if it means any given disease, as the common continued fever, then we ask who can give a definition applicable to all the states of this universal affection? The thing is not possible; and it is to view Cullen's definition unfairly, to suppose that this was intended. It is, then, idle to adduce states in which all the symptoms in Cullen's definition are not to be found; and will Dr. Smith, still wielding the weapons of his unacknowledged master, presume to say of Cullen, that assemblages of symptoms enumerated by him "do not even exist in nature?" The Doctor must have seen, if prejudice would allow him, the very states and assemblages of symptoms quoted from Cullen; he must have seen fever having a very different aspect at the beginning and at the end—having an inflammatory character at the outset, and at the end a typhoid. Has he not seen exquisite examples in the fever of small-pox? We remember Dr. Armstrong, when ridiculing Cullen to his wonder-stricken class, comment severely on Cullen's definition of synochus—"initio synocha, progressu et versus finem, typhus," he exclaimed exultingly, that if this synochus was one thing at the beginning and another at the end, what was it in the middle? This was pitiful.

The series of events, or in other words the order of the symptoms, are much insisted on, and bring our author to the conclusion that there is, first, derangement in the nervous and sensorial functions; secondly, in the circulating functions; thirdly, in the secreting and excreting functions: this is the last result in the succession of morbid changes.

The third chapter opens by a description of the synochus mitior, which is drawn chiefly from the author's own case, "he having suffered a severe attack of fever." This description is well written, and in an appendix would be interesting, containing, as it does, the feelings and workings of the mind under the attack; but it is ill calculated for a graphic account of an attack of fever; being much diluted, and its chief features scattered through many pages instead of being comprised in one; it is moreover very defective in the characteristic physiognomy of fever. "The colour of the face (he says) is pallid; and the general aspect is so peculiar

that an experienced eye can distinguish the disease," &c. Authors should write for the inexperienced. No condition gives such a field for description as the face of a person labouring under the common continued fever; but this Dr. Smith has omitted very unaccountably; though we guess this detail has been passed over, lest it should shew signs of debility, which is not the author's object. He says nothing of the general dull and dusky (not pallid) skin, the depending eyelids, the dull pearly eye, the vacant countenance, the half-open mouth, and all the other effects of muscular prostration.

A description should be concise to convey a striking picture to the reader, and it must be drawn from the patient, not from the sick physician himself, for the depressed mental energy of one afflicted, or about to be afflicted, with the common continued fever, is a barrier to correct and acute perception. The first sign which our author felt when sickening, was a loss of mental energy, and this he experienced for a considerable time before he was conscious of any corporeal debility. This mental depression may have blunted his consciousness, for corporeal debility is one of the earliest signs of an attack of fever: patients feel dull and weak, and know not why; they sit and lie all the day, and if they move about, their knees are ready to give way under them; the muscles can scarcely hold the bony frame firm enough together to support the weight of the body. Now we beg to ask Dr. S. as a physiologist, can there exist this depression of mental energy without a corresponding depression of muscular energy? Is this depression confined to the intellectual faculties, or does it affect the whole nervous system and the muscular as a consequence? Undoubtedly it does; it cannot be otherwise. But then this would be to admit signs of debility!

Our author's notions of the difference between the mild and severe forms of fever are, that the difference is the consequence of the addition or supervention of inflammation in certain organs, on which account he ranks all the inflammatory affections with the synochus gravior, and thus he speaks of synochus gravior with subacute and acute cerebral affection, with thoracic affection, with abdominal affection. There is no mention of inflammation as connected

with the synochus mitior. In our humble opinion this view embraces a radical error: it is not the organic inflammation that modifies the character of the fever, for the fever may be of a mild form, as regards its peculiar character, though the inflammation may be subacute or intense; so may the fever be of a severe form, whatever be the degree of inflammation. It is the inflammation that is modified by the fever, not the fever by the inflammation. Thus the synochus mitior may be complicated with every variety of inflammation, as also may be the synochus gravior. It is very important to know how the common continued fever and inflammation are acted upon by each other: we agree with our author that the inflammation is modified by the fever, but not that the character of the fever is modified by the inflammation. The erroneous notion above spoken of, renders the author's account of the synochus gravior with subacute and acute cerebral affection, not very intelligible. Now the acute observation of Dr. Armstrong soon discovered to him that inflammation frequently existed in cases of fever, and he, without waiting to analyze this complication and to find out the relation in which the fever and the inflammation stood to each other, at once and hastily made this complication one of his divisions of typhus, and called it "inflammatory typhus." Dr. Smith's divisions are little more than a version of Armstrong's, and he has even borrowed his expression of fever *passing* into inflammation; which, by-the-by, is not intelligible, nor, with submission, do we think possible; it was evidently meant by Armstrong to point out the important fact, that organic inflammation is often an adjunct to fever. On this subject a recent author, Dr. Burne, is more explicit, he regarding inflammation as accompanying the different types of fever; and as his remarks are short, we subjoin them in a note\*.

\* "At whatever time, or in whatever way the inflammation may arise, it is modified by the adynamic fever; for the prostrate condition of the nervous and muscular systems, which has been described as pathognomonic of this fever, prevents the inflammation going on with full force; it gives to the inflammation a character which is known by the term atonic; and the inflammation partakes of this character, more or less, according to the degree of the adynamic fever, the adynamic state having a direct tendency to depress the violence of the inflammation."—Page 41.

"The degree of local inflammation is by no



The synochus gravior with subacute cerebral affection is, we are informed, the same in its access and progress up to a certain period, when the pain in the head, instead of diminishing, increases; still the pain is not severe: this account does not tally with our experience. Several pages are occupied in discussing the indications of pain and giddiness, and in attempts to erect a diagnosis upon these signs,—but here we do not comprehend our author; indeed, his own views are evidently not exact and clear. The synochus gravior with acute cerebral affection, in the most acute form, is precisely the same as the subacute, except that the symptoms are more severe, and their progress quicker. The head-ache is much more intense, and this leads the Dr. to the extraordinary case of the apothecary of the hospital, Dr. Dill, which, however, we will not mangle in this place, but reserve it to be spoken of under the treatment. We have not been accustomed to see “intense” and “ferocious” head-aches in fever, nor has inflammation stared us in the face as it has done our author.

All the signs of the acute cerebral affection, noted by Dr. S., have not appeared to us to depend so much on vascular as on nervous excitement: the difference between these two affections does not seem to have struck our author; his creed is inflammation, nothing but inflammation—and his practice bleeding, nothing but bleeding: but as he grows older, we trust he will learn to distinguish the mockery of a nervous excitement from the reality of an inflammation.

In illustration of the subacute and acute cerebral affections, are five cases, which, with submission, we think are unfortunately chosen, being ill adapted to support the position—inflammation; indeed the Dr. shrewdly guesses as much, for in the introduction to the last case he says, “if the reader can

doubt of the condition of the brain in this case, he is requested to turn to the pathology,” which is anticipating the reader’s doubt as to the first four. And respecting this fifth and last case, we have been rather embarrassed to find the dissection in the pathology, the case being there numbered differently, and again reported in a more concise form: in one account the patient is said to be 36 years of age, in the other 26, but the accounts accord in so many other particulars as to leave no doubt of their identity. The first case is in our judgment merely an example of the synochus mitior: no treatment is given. In the second case, there was headache, but we do not remark any sign of inflammation, unless this was the index, which of itself is an insufficient one. In the third case, we should attribute the head symptoms to the state of the abdomen; and the indistinctness of mind would probably have been relieved by freeing the alimentary canal of its foul contents, as we have often witnessed; for although there may be a loose state of the bowels, there is often foul and filthy matter retained, which is the case especially in the second stage of fever. This case recovered after a very slow and tedious convalescence; but we are not put in possession of the treatment even here. In the fourth case, the bowels were constipated and the abdomen tender, which would aggravate the head-ache of fever: the patient was cupped to  $\text{3xviii.}$  and next day was reported “more sensible since the cupping,” but no mention is made of the alimentary canal, whether the aperients had operated, or what the nature of the stools; nor do we find more mention of the bowels till after *three* days, when the urine and dejections are passed in bed, shewing excessive prostration. The patient ultimately became salivated, but did not leave the hospital until the *sixtieth* day from the attack, having been admitted on the *eleventh*: we ascribe much of this protracted convalescence to the loss of blood. We cannot even meet our author’s views in the fifth and last case, on which he mainly relies for the conviction of his readers. It was not admitted till the fourteenth day of the disease; and we are at a loss to discover any thing in the history, or in the dissection, to call for or even warrant the abstraction of so much blood at a late period. The pain

means necessarily commensurate with the degree of the adynamic fever. The degree of inflammation may be violent, while the degree of the adynamic character of the fever is slight; or the degree of inflammation may be slight, while the degree of the adynamic character of the fever is severe; or the degree of the inflammation and of the adynamic fever may be simultaneously slight. Thus the adynamic fever of the first degree may be attended with a severe pneumonia; or the adynamic fever of the third degree may be attended with a slight pneumonia.” Page 43.—*A Practical Treatise on the Adynamic or Typhus Fever*, by John Burne, M.D. &c.

in the head is gone one day, but returns the next; it goes again in like manner, and again returns: we know of no inflammation of the brain of any degree or kind soever, in which there is this entire absence or removal for a time: pain in the head in fever may be removed by bloodletting, but it returns, and he who, like our author, returns to the attack with the lancet, will too often reduce the vital powers to a point from which they rally no more; as was the case in the instance before us. The patient died on the 29th day; and on dissection, there were found three ounces of serum in the ventricles: but the brain and membranes were pretty healthy, except some coagulable lymph (consistent albumen?) on the tuber annulare.

Now we would ask, what was the state of the urinary organs here three days before death, when there came on extreme restlessness, almost constant moaning, and the pulse rose suddenly from 75 to 120? we suspect there was ammoniacal urine formed by retention in the bladder, which gave rise to the symptoms above-mentioned, as also to the ventricular effusion. We have very lately witnessed a similar case. Extensive lesion was also found in the liver and lungs, enough of itself to turn the balance against the patient, even without the loss of blood; and with it, destruction was certain. Knowing how ill patients bear the loss of blood who have organic lesions, and how surely destructive free bloodletting is in cases of fever attended with these circumstances, we can scarcely believe our senses when we read in Dr. Smith's comments on this case, his regret that more blood was not taken away on the 15th and 16th days. This poor creature, admitted as late as the 14th day of her fever, and affected, as the dissection proved, with a hard liver, and having also the pleuræ adherent, and the substance of the lungs full of tubercles in different stages of the disease, (viz. in a confirmed phthisis, we suppose,) is considered to labour under an acute cerebral affection, for which 32 oz. of blood are drawn at different times, and in addition, eight leeches applied to the head; and yet our author regrets that more blood was not taken. Can any thing equal this infatuation? What patient having the substance of the lungs

full of tubercles, in different stages of disease, can stand up against the merciless lancet? No mention is made of medicine—no remedy noticed but bloodletting, shewing the exclusive prepossession of the author's mind.

*Synochus gravior with thoracic affection.*—Our author is of opinion, that the mucous membrane of the bronchi is not in a perfectly sound state in any case of fever, and that a certain affection of it is peculiar to this fever; but he enters into no detail of the nature of this affection, though he adduces a train of symptoms which may be contrived to refer to any disease whatever of the chest. These examples are subjoined in illustration, which we will notice when we come to the chief body of cases.

*Synochus gravior with abdominal affection.*—"One of the organs," says Dr. Smith, "always involved in disease in a greater or less degree in fever, is the mucous membrane of the stomach and bowels," and although in slight cases it produces no change of structure, he believes it is really diseased even in the mildest cases. "Abdominal affection exists under two forms in fever, each of which is attended with distinct and peculiar symptoms." The first form appears to us, from the description, to be a simple gastritis, or a cholera, or a dysentery, the symptoms being nausea, retching, vomiting, and purging, with pain; but these we cannot consider as belonging to fever. We have seen a vast number of these cases in the last autumn, but had no reason to ally them to fever; they do not form a part of the disease like the second affection, the disease of the ileum. These are accidental complaints which may or may not be attended with the common continued fever; and moreover, they are quickly relieved, and in the majority there is only a sympathetic febrile movement, which vanishes as soon as the gastric irritation is allayed. In this abdominal affection, our author follows Armstrong most closely.

The second form of abdominal affection "is attended with much less striking symptoms," and requires great attention to discover its presence and trace its progress—it steals along its fatal course, and is often "unfelt by its victim, and undiscovered by his most watchful guardian." Though we consider even the most latent abdo-

minal affection for the most part to be distinctly marked by external signs, we sincerely concur in the observations of Dr. Smith, that the intestinal affection is very imperfectly understood, generally speaking, and consequently very inefficiently treated; for often have we seen the temples leeches, and other remedies directed to the head, when all the symptoms depended upon the intestinal canal. It is our belief, that after the tumult and commotion of the first days of fever have passed by, the disease is often wholly kept up by the disordered condition of the intestinal canal; and it is to an improvement in the treatment of this particular affection that we have to look for the power of rendering the course of fever shorter, diminishing it from weeks almost to days. Of this abdominal affection, the Dr. enumerates but few symptoms, as tenderness on pressure, which, he says, is sometimes wanting; looseness of the bowels, which, he says, may or may not exist, or there may even be constipation; while the tongue is generally red at the edges and tip, loaded with dirty grey or yellow fur, and sometimes dry, the pulse being generally 120. Now there is here no mark by which to know the presence of disease; for every sign mentioned may or may not be present according to our author; as there may or may not be tenderness on pressure, there may or may not be a loose state of bowels—there may or may not be a dry tongue. Here the Dr. fails in the analysis of the symptoms, as we think he does on other occasions: he mentions a train of symptoms which occur, no doubt, and which he has witnessed, but he does not analyze them, and refer the separate assemblages of signs to the particular states which they represent, and therefore the reader is lost; for it is clear that what an author does not know precisely, he cannot with precision communicate. These remarks apply also to the little work of Dr. Bateman, which, whatever may be its other recommendations, is but of little value as a clinical guide. We could readily dilate on the affection of the intestinal canal, and enumerate the signs which indicate its peculiar condition, and the circumstances which attend its development, but this would be to write an essay, which is not our business: we may, however, close this

part of the subject by expressing our surprise that the flushings of the face, the nature of the dejections, and the meteorizations, should have almost escaped our author's attention.

*Synochus gravior with mixed affection.*—Here two or three of the affections above-mentioned exist simultaneously, as the cerebral with the thoracic, or with the abdominal, or all together, and are indicated by their particular signs.

Next follow typhus, with cerebral, thoracic, and abdominal affections, as in synochus. As these depend, says our author, on difference of intensity, it is unnecessary to go into them, particularly as we find no satisfactory diagnostic marks. Here our author is compelled to admit there is prostration, and in so doing he, unawares, acknowledges there is prostration in synochus, which before he had denied. He observes, "there can be no doubt, that from the very first commencement of the attack, as well as through the whole course of the disease, the prostration of strength, both physical and mental, is greater than it is in synochus;" and yet a few pages further on, when speaking of typhus gravior, he says, "they (the intense forms of the disease) have been conceived, (by whom we beg to ask?) to form exquisite specimens of diseases of debility;"—"but where is the debility?—Not in the disease, for that is of giant strength; not in the patient; for remove, if you can remove (ay, there's the rub) a part of the load that oppresses him, and instantly an intensity of action will set up in the whole system," &c. p. 164. These extracts exhibit a sad contradiction; but truth will out. The author allows his imagination to run on before his judgment, as is seen in the last extract; and when any fine turn of language crosses his mind, he cannot resist the temptation to introduce it, however inappropriately, as in the exclamation, "where is the debility?" and in the reply, "not in the disease;" although this answer is at variance with what was advanced a few pages before. This is what Bacon would call an attempt "to suppress truth by the force of eloquence and speech." One would suppose the Doctor was spouting to an assembly; for in a popular harangue, the hearers, like the orator, may be carried away by a redun-



dancy of plausible and figurative language; but in a book of science, gravely laid before the public, these things are weighed in the balance, and woe betide the author if they be found wanting.

Passing over a short chapter on scarlet fever, we shall proceed in another article to a very important subject—the Pathology of Fever.

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*Remarks on Nervous and Mental Disorder, with especial reference to Recent Investigations on the subject of Insanity.* By DAVID UWINS, M.D.

BEFORE making any allusion to the work whose title has been quoted, we take this opportunity to settle a certain little account with the learned and facetious author. We have not forgotten—nor has Dr. Uwins, that our opening number contained a notice of his work on Indigestion. This notice, we maintain, notwithstanding all that he has said of it, and after all the time which has elapsed since it was written, to have been a fair review; keen, it is true, but still “within the limits of becoming mirth,” *i. e.* reviewer’s mirth. There was in it nothing personal nor coarse, and we had fancied that even the victim of our critical dexterity would have been gratified by the epigrammatic point of the article. But little did we anticipate the storm which was brewing. Month after month passed on, and we continued our undeviating and upright career, the good opinion of surrounding persons seeming to “grow with our growth, and strengthen with our strength,” when about the period of our second anniversary we beheld a new-born candidate for the support of the literary and professional public. We hailed the appearance of the “Medical Examiner” with that subdued and doubtful welcome which attends the arrival of one who is expected to deprive another of some part of his possessions: we own that on finding Dr. Uwins—as if in anticipation of the speedy descent of the publication to “the tomb of all the Capulets”—busily employed in paying his debts to contemporary journals, “right and left:” we read on right willing to see fair play; for, as La Rochefoucault says, “there is something in the misfortunes of our best friends which is not altogether displeasing to us;” but we were in the

end a little startled on discovering that all this was but mere playfulness compared with a tremendous attack upon ourselves. We ended the climax in a long series of sufferers under the Doctor’s lash, and were certainly “scourged with scorpions.”

We have now an opportunity of revenging ourselves; for Dr. Uwins, in his last *brochure*, has, in our judgment, wilfully laid himself open to criticism. So palpable, indeed, are its faults, that we should make ourselves ridiculous by noticing them seriously.

Most unluckily for our author, the late Mr. Gifford, in an evil hour, accepted an article on Insanity from his pen; it appeared in the “Quarterly,” and this event seems to have been too much for the worthy Doctor, who, we verily believe, has never written any thing since that time without alluding to it. Even in the pamphlet before us, we are once more told of the “success of the article”—of the “praises” bestowed on it “by those whose praises were highly to be appreciated,” till at length the author, inaugre all an author’s fondness, seems to be ashamed of the reiteration; for, in his concluding reference, he very truly calls it the paper, “in alluding to which I fear I sicken my reader,” &c. After fourteen pages of preliminary matter, in which he likens his predilection for insanity to Dugald Stewart’s preference for metaphysical investigation, Playfair’s for natural philosophy, and that of Lawrence, Turner, and Wilkie, for painting, we come at length to the gist of the argument, which is to shew, 1st, that mental and mere nervous or “sentient” disorders are too much separated; 2d, that medical men are better acquainted with these than *lay* practitioners; and 3d, that Lunatic Asylums, if called by any other name, “may be of essential service to the community,” and ought not to be viewed with sentiments of hostility any more than houses of recovery from fever, &c.

The two last come so nearly under the description of self-evident truths, that we shall not stop to illustrate them. The first affords more field for discussion, and we shall give a specimen of our author’s mode of handling it;—having first taken occasion to deprecate the idea of there being any thing like hostility in the “lively sally” which may now and then escape the pen of a con-

troversialist. Having premised this, we may state that Dr. Uwins is physician to the Peckham Asylum, and that the manner in which he commences his endeavour to prove his first position is by informing us, that one of the first patients he sent there did not labour under insanity. We shall give his own words:—

“In defending the first of the above positions, I shall commence with a startling announcement. It is this—that almost the first patient I sent to Peckham Asylum was not mad. Indeed! exclaims my reader: then have at him, ye advocates of justice and defenders of law; surely this man, with such a confession from his lips or pen, deserves, if any one does, to be arrested in his career of inhumanity, and swept down by the *broom* of forensic authority. But stay a little, my gentle and generous critic; I will not give way so readily as some of my brethren have done, to the taunting power of froward contumely, but before condemnation will demand to be heard and attended to. What, however, I have further to say, in reference to the particulars of this case, I reserve for my third division: in the meantime, I invite my good friends, the barristers, to open with me a volume written by one Shakspeare, ‘a name that always recalls to his intelligent readers the first of poets, and the most penetrating of observers’—a man who had ever the power of truth at his call, and the pen of nature in his hand. Now, although I once heard a medical man inquire who was the author of Beaumont and Fletcher; and although it was told me of another, that he remarked upon a glorious passage from our immortal bard, ‘Yes, it is very pretty;’ and although there may have been *even among us* an occasional manifestation of moral turpitude, to the extent of saying any thing, however false, for the sake of lucre; and although you gentlemen, who are the professed advocates of—truth, have recently not evinced any very extraordinary respect for the professors of a rival art, yet you will, I hope, allow that there is at least literature and discernment among us sufficient to appreciate the force and truth of the great master whom I am now to quote; and were it not that I should thereby give you some latitude for the exercise of your contumely and scorn,

I would go further, and say, that there is more to be found in the volumes of Shakspeare, on the head of mental disorder, its circumstance and philosophy, than in many of our medical authors who have written on insanity.”

We have then some further commonplace remarks about Shakspeare, after which the discourse falls upon Le Sage, and the connexion between nervous and mental disorder is illustrated by the well-known story of the Archbishop and his Secretary:—

“The eloquent prelate to whom Gil Blas was appointed secretary, fell, it will be recollected, into apoplexy; he recovered, however, from it so far as to be able to compose and deliver homilies; but lo! these productions, instead of being now marked by the features of legitimate and impressive eloquence, are turgid, and bombastical, and inane; while the preacher still imagines them beautiful and good.”

Dr. Uwins, we believe, never had a fit of apoplexy. After a few more “lively sallies” of this nature, the author at length assumes a graver tone. This part he begins with—“To be serious,” and it is the first sentence in the pamphlet which provokes a smile. But “serious” with the Doctor we cannot be without differing from him, and we prefer on this occasion expressing to the author our willingness to understand, in his own way, all that he says, and to be on as good terms with him as he seems to be with Dr. Uwins, provided he will for the future consider that all his readers may not be equally able, nor equally willing, to penetrate his design, and humour it; and provided he will bear in mind that “no author was ever written down but by himself.”

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#### CASE OF SUBCLAVIAN ANEURISM, WITH OBSERVATIONS.

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*To the Editor of the London Medical Gazette.*

SIR,

THOMAS BRIGGS, aged 54, by trade an iron-plate worker, was admitted into St. Bartholomew's Hospital on the 25th March with a pulsating tumor, situated immediately below the left clavicle. He

stated that it had been gradually increasing for about ten months. On a careful examination, there was reason to suspect that the tumor was caused by an aneurism of the subclavian artery at the part where it passes beneath the clavicle. The tumor was of the size of one half of a large orange. The lower margin of the tumor was firm, and no pulsation could be felt at this part, nor when examined from the axilla beneath the edge of the pectoral muscle: at the upper part the tumor was softer, and pulsation was very distinct. No additional evidence was afforded by an examination with the stethoscope. The pulsation in the humeral and radial artery *was as strong as on the healthy side*. This circumstance, added to the firmness of the greater part of the tumor, induced me to entertain hopes that a spontaneous cure, by obliteration of the aneurismal pouch, might be effected without the current of blood in the direct course of the artery being arrested. On looking to Mr. Hodgson's and other practical works for information on this subject, I could not find any recorded instance of such an occurrence in a vessel of this order, although there exist many dissections proving the possibility of such a termination in vessels of a larger calibre, and in some cases of spurious aneurism from punctures of the artery at the bend of the elbow. Entertaining this view of the subject, I was induced to delay performing the operation, which would have been doubly hazardous in the very deranged state of the patient's health, who suffered much from pain in the region of the stomach and liver, accompanied with frequent vomiting. His complexion was very sallow, his skin bedewed with a clammy sweat, and his tongue was much coated, and morbidly red at the tip. All these circumstances combined warranted the delay which took place, the tumor being accurately measured from day to day with a gauge made of pasteboard. The treatment pursued consisted in repeated moderate bleedings from the arm; the frequent application of leeches to the pit of the stomach, from which he derived marked alleviation of pain; very low diet; and saline medicines. He took also for two days the tincture of digitalis, but this disordered his stomach so much that it was discontinued.

As he complained of heat and pain in

the tumor, extending down the arm, he was directed to keep pounded ice in a bladder upon the tumor. From this he derived great relief, and although it was applied night and day, the integuments did not suffer. Under this treatment his general health improved, the tenderness of the stomach diminished, and the tumor remained stationary as to size, and the pulsation became less distinct. The pulsation in the artery beyond the tumor remained free and undiminished. Such was the state of the case on Saturday the 10th of April, when I called a consultation with my colleagues to decide on the propriety of operating, or persevering in the attempt to favour spontaneous cure. I submitted to them all the circumstances of the case, and particularly directed their attention to the fact of the undiminished strength in the pulsation of the artery beyond the tumor, which I was led to consider as favourable to the supposition of the pouch occupying only one side of the artery, and consequently receiving but a slight impulse from the circulation, whilst the bulk of the circulating blood passed on in a direct course to the artery below. My argument was founded on having repeatedly observed that the circulation in an artery below an aneurismal sac was much more feeble than in the opposite healthy limb, and on the belief that if a certain portion of the vis a tergo was expended in transitu through the sac, the force in the circulation beyond it must necessarily be diminished. The prevailing opinion was, however, opposed to this, and the very circumstance of the force of the circulation below was considered as proving the free ingress of blood into the sac, and consequently the slight probability of any spontaneous cure. It was further urged that there were no recorded instances of obliteration of the pouch without impeding the flow of blood through the artery in a vessel of the order of the subclavian. The patient was now in a more favourable state for operation than when he was admitted, and it was possible that by a further delay the tumor might increase, and the clavicle be more raised, which would increase the difficulty of the operation. Of this latter circumstance I was fully aware, and, as I had no facts to adduce in support of my argument, I yielded to the opinion of the majority, and resolved to perform the operation



without further delay. Up to this time the patient had been kept in ignorance of the probability of any operation being necessary, from my wish to keep his mind and body in that state of tranquillity so essential to promote the efforts of nature. A gentleman incautiously mentioned the operation within his hearing, without any preparation, which excited him greatly, and he rose from his bed in great agitation, and could with difficulty be restrained from quitting the house. I explained the nature of the operation to him, and the necessity for performing it, and gradually tranquillized him; but he was not in a fit state to undergo the operation on that day.

On examining the tumor on the 13th it appeared to me that it was increasing in a direction beneath the clavicle, although the gauge showed a slight diminution in the more prominent part below. The following day was consequently fixed on for the operation, which was performed in the following manner:—The patient was placed on a table, with the head and shoulders slightly elevated. An incision was made through the integuments and platysma myoides, about four inches and a half in length, along the upper edge of the clavicle. It was necessary to divide a considerable vein which crossed the wound and entered the jugular: a ligature was passed round this, and the dissection was cautiously proceeded with, in doing which I was materially assisted by having a small knife shaped like a cornea knife, only so blunt as not to cut, although it separated the firm cellular tissue more easily and with less violence than an eyed probe or the handle of a scalpel, which are commonly employed for this purpose. On introducing my finger into the wound, I could distinctly feel the beating of the aneurismal tumor, which had raised the clavicle considerably from the first rib, although the shoulder was not much elevated.

Having felt the tubercle of the first rib and the edge of the scalenus, my fingers detected a pulsating cord in the situation of the artery, under which I passed an unarmed silver needle without any difficulty. On examining this cord under which I had passed the needle, I distinctly felt the pulsation as strong as before; but on compressing it on the needle, the pulse at the wrist was not arrested, and the man com-

plained of a pain at the inner side of his elbow. It became apparent that I had surrounded the ulnar nerve, and not the artery which was situated immediately below it, and communicated its pulsation to the nerve even through the needle which was interposed. Previously to withdrawing the needle, I armed it with a silk, and requested Mr. Stanley to draw the nerve gently upwards and outwards. By this expedient, with a little more dissection, I fairly exposed the naked artery, and readily passed the same needle round it; and on compressing it, the pulse at the wrist was immediately arrested. The needle was then armed with a silk ligature, and the artery was tied. One end of the ligature was left hanging from the wound, which was closed with adhesive plaster. At the time when the nerve was drawn aside, the patient complained of pain in the elbow, which soon ceased after the operation. The bulk of the tumor was very slightly diminished by pressure immediately after the operation, and the contents of the sac felt very firm. Very little bleeding took place during the operation, and the only difficulty arose from the depth of the artery and the very deceptive feel communicated to the finger through the nerve which was situated immediately over the artery. It was remarkable that the pulsation was less strong when the artery was quite denuded than when felt through the medium of the nerve. This shews the importance of proceeding with great caution in this operation, when the touch, and not the sight, must often guide us; as I felt quite confident that I had surrounded the artery in the first attempt to pass the needle, but was soon convinced of my error by failing to arrest the pulse at the wrist when the nervous trunk was gently compressed upon the needle. I employed an unarmed needle in this case, which I always prefer, from the greater facility with which it can be passed than when armed—the wet silk often affording a considerable *obstacle*, and deceiving the operator as to the degree of resistance he meets with in passing the needle.

The operation was performed at one o'clock; at two, he complained of pain and numbness in the whole arm, the temperature of which was gradually diminished down to the fingers, which felt very cold. The arm was enveloped

in soft flannel. At half-past three a very slight pulsation was felt at the wrist, which was lost on the slightest pressure. I visited him at 8 p.m. and found his face flushed, and he complained of pain in his head. His respiration was unembarrassed, and the pain in the elbow and arm was diminished. Twelve leeches were ordered to be applied to his temples, and the bleeding encouraged with warm flannels. The leeches afforded much relief, and he had some sleep during the night. The following morning there was some return of pain in the head and general excitement, which was relieved by purging with saline purgatives. He had some hours tranquil sleep; but on my visiting him at one p.m. the flushing of the countenance and forcible beating of the carotids determined me to take more blood from the head; accordingly the temporal artery was opened, and  $\frac{3}{4}$ vj. of blood were taken away, which afforded him great relief. During the state of excitement he complained of great heat in the left arm, but the temperature, on examination, was not higher than that of the opposite limb. From this time he went on very favourably, until the following Monday, when I found him very ill. He had experienced a severe rigor, which was followed by much heat and fever. His pulse was strong and frequent, tongue very loaded, and countenance flushed; and he felt assured that he should die. He was bled to the extent of twenty ounces, and a full dose of calomel and opium given, and the strictest quiet enjoined. I now learnt the cause of this excitement from another patient, who had been operated on for a popliteal aneurism on the right side, having undergone a similar operation, under my care, five years before, for the same disease on the left side. He stated to me, that it was impossible for Briggs to do well, for the moment my back was turned he was cursing and swearing at the nurse and every person who came near him. He was a very thankless, morose fellow, and was perpetually exciting himself and quarrelling about trifles. He was much subdued by the bleeding and other remedies, and I took the opportunity to talk very seriously to him, and to represent to him the exact situation in which he was placed; that, literally speaking, his life hung by a thread, and that he might be sum-

moned to give an account of himself in a moment, if he gave way to such intemperate conduct. From this time he continued to go on more favourably. He was very low spirited, sullen, and silent, but nothing sinister occurred. The ligature came away in a bread poultice on the sixteenth day. Since that time the wound has slowly granulated, but it still discharges rather copiously, and his health is still much impaired. His pulse is regular, he has no embarrassment in breathing, and he takes his food with appetite; but he has a very unhealthy desponding appearance. I hope, in a few days, to be able to remove him into the country, which, I trust, will re-establish his health. I have delayed sending any account of the case until the present time, being anxious to report him quite convalescent. As, however, the operation may be considered to have been perfectly successful, I am unwilling to delay any longer communicating the case to the public, more particularly as this is the first instance in which this artery has been successfully tied in St. Bartholomew's. Should any circumstances of importance in the future progress of the case occur, I shall not fail to communicate them through your valuable journal, and have the honour to be,

Sir,

Your obedient servant,

H. EARLE.

George-Street, May 8, 1830.

#### OBSERVATIONS ON THE ART OF MODELLING,

*As connected with the Medical Profession; with Remarks illustrative of the general Utility to which its Cultivation may be rendered available.*

BY JOHN ELDERTON, SURGEON.

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*To the Editor of the London Medical Gazette.*

SIR,

It was with pleasure I perused, in your interesting miscellany of last week, a communication by Mr. Alcock, relating to the topic of anatomical models; and happy I was to learn that encouragement was held out, to the junior members of the profession, for the cultiva-

tion of an art which merely demands unbiased reflection to convince the world of the advantage to which it may be rendered subservient. A residence for some years at the Northampton General Infirmary, afforded me both time and opportunity to cultivate a process which, having for its general scope the elucidation of the various parts of the body, either in health or disease, I have ever considered strictly professional; and when I inform my brethren that, at my removal to town in the year 1822, I paid Messrs. Pickford and Co. for the carriage of 3 tons 17 cwt. of coloured anatomical models, the profession will be perhaps disposed to allow that the construction of such a collection must have both familiarized me with the art of their preparation as well as furnished reflection collateral to the subject. I trust I may, however, be pardoned for remarking, before entering more fully on my paper, that having repeatedly suggested to individuals arguments demonstrative of the utility of the art, to learn that patronage now sanctions a measure which was viewed as hypothetical, accords with the too often experienced truth—namely, that the specific merits of any suggestion relating to a profession, should alone claim unbiased consideration from its members, in place of its successful issue depending on the vague decision of any popular individual, less scientific than perhaps remarkable for worldly success and a blind devoted deference from mankind.

In regard to the facility with which a knowledge of the process of casting may be acquired by a student (and of which I will first treat), I perfectly coincide with Mr. Alcock, that there are no obstacles to encounter but what common capacity may surmount; at the same time, circumstanced as the generality of medical students are in towns, unless numerous auxiliaries were prepared, the accomplishment of such an object would prove any thing but what I have in view. That my observations relate to the art of elucidating the various parts of the body, healthy and morbid, through the medium of coloured anatomical casts, the reader will by this time have understood; always having considered the artificial representations emanating from the mere modelist, howsoever ingenious and productive of effect they may prove,

much inferior to the characteristic fidelity of nature, which the science of casting may be brought to accomplish. That casts may be taken of the various tissues of the human body as faithfully correct as the impression of a seal is imparted to its wax, I shall be most happy to prove, by either transmitting for inspection any I have made, or by taking impressions, if required; but as there are countless examples connected with the method of illustrating the nerves, arteries, and bony processes, &c. that demand management totally distinct from common muscular casting, and which I only attained a knowledge of from time and various experiments, I shall not, perhaps, be expected to explain the same without some motive beyond the inducement incidental to a communication of the present character.

Affording, perhaps, a test of the fidelity with which casts may be constructed to imitate nature, I should imagine no process of modelling could preserve the hair in the eyelash with its characteristic regularity, as displayed in many casts; while the smallest demonstrable capillary nerves, and fibrous structure of the muscles, are as accurately represented as the outline of coarser parts.

Not to omit what I have ever estimated would prove a considerable advantage attendant on students preparing these representations of the anatomy of the body, is, that to complete the cast, and give the various colouring tints to its surface, the part, while under dissection, must be minutely and accurately impressed on the memory; otherwise the outline of the cast, when taken from the mould, will by no means in all cases bespeak its parts; and from this source, as a necessary consequence to represent the several parts in correct colours, the mind is usefully exercised in this second process, to a degree beyond, perhaps, what was the case when dissecting and preparing the part.

With respect to the advantage to be derived, both to the public and the profession, from a liberal cultivation of the subject of my paper, many examples may be adduced; but the witnessing the mode of taking a few representations in plaster, would impart more insight into the mechanical part of the art than any information to be imparted by word.

As a considerable portion of the time



of a medical student, upon entering on his professional career in our larger towns, is occupied in dissecting-rooms, on principles of instruction at first limited to the knowledge of familiarizing himself with the relative bearings, names, and connexions of the various parts composing the human body; I am prepared to prove, that such necessary fundamental acquisitions of the science may be obtained both with facility and accuracy as soon, or sooner, from access to such casts, than from the routine system of examination, casually, perhaps, presenting a view of any part a mere limited number of times to a student in a dissecting-room. That daily access to such exhibitions would familiarize the mind with the relative bearing of parts, and stamp the same on the memory to an advantage beyond the mere temporary inspection from manual dissection, can scarcely, it would be supposed, be questioned; and as such initiatory dissections are totally independent of any researches, either physiological or pathological, I conclude the suggestion can only meet with opposition from individuals whose unacquaintance with the merits of the subject renders them incompetent to judge with impartiality. That the arguments and opinions of professional writers from the earliest period, present sentiments in reference to the necessity of cultivating dissections, apparently opposed in part to what I have recommended above, I do not for a moment contend against; and were any of your readers to conclude for a moment that I was not fully impressed with the necessity of medical students cultivating the exercise of the hand by dissections, or that I did not consider personal examination of the body by students as a branch of professional education of incalculable benefit both to science and the community, I should be misinterpreted, merely having had in view the aim of shewing, that while artificial measures are found adequate to familiarize the student with the coarser structure of the animal organization, the mere plea of exercising the hand is but a chimera when we reflect on the limited sphere of operative surgery occurring to so few in after-life.

Having during my stay at the infirmary, as well as since my retirement, had the care of instructing several medical gentlemen, I hesitate not a mo-

ment to affirm, that the information to be derived from anatomical coloured casts is not solely limited to the means of imparting structural information, but that by the extensive scope of references such collections afford opportunities of adverting to, both physiological and pathological axioms may be elucidated to an advantage that few dissecting-rooms afford opportunities of equaling.

With professional gentlemen residing in the country the possession of such casts would be soon practically estimated, for I need not remind men of my own standing how treacherous is the memory in respect to points bearing on anatomical reference. Were students, therefore, to prepare these models, their attention would not only be necessarily ensured, as before explained, but useful illustrations of the more essential parts would be in their possession, ready to refer to under emergencies of future practice. The accuracy with which the anatomy of the parts connected with the several varieties of hernia and vascular structure may be shewn, is little perhaps imagined by those who have not witnessed the productions of the art.

As affects the interest of the community in promoting the cultivation of anatomy—a most essential branch of a valuable profession, a minute acquaintance with the intimate structure of the human body may be patronized among its members with a direct and immediate diminution in the demand for human bodies, the present system of supplying which is so often revolting to the feelings of human nature, than it would be absurd to suppose it could long continue on so precarious a basis as that at present existing.

To conclude, I cannot imagine a more useful or splendid exhibition than might be formed, were the nation disposed to patronize the art contemplated; and when we reflect on the numerous specimens of disease occurring at our metropolitan hospitals, opportunities would occur of perpetuating cases, the possession of which would not less tend to promote medical science, than their loss is now indirectly experienced by the public. But when it is considered that, contrary to many other pursuits, the various processes of such an art must, to obtain completion, pass entirely through

the hands of the same individual; and that extensive medical knowledge, as well as mechanical tact, are requisite accomplishments for a person to be able to avail himself physiologically of the several circumstances a part may be rendered capable of professionally elucidating, it cannot be supposed individuals would be found to enter upon the fatigue and confinement of such a pursuit to the necessary exclusion of other sources of practice, excepting under circumstances of a liberal remuneration.

I am, Sir,

Your obedient servant,

JOHN ELDERTON.

Northampton, May 4, 1830.

### CASE OF UMBILICAL HERNIA TREATED BY LIGATURE.

By ROBERT COWAN, Surgeon.

IN 1827 I was called to visit a child about three months old, which, on examination, was found to have an umbilical hernia, as large as an hen's egg. No herniary tumor existed at birth, nor for at least ten days afterwards; and the tumor had been noticed only the day before I saw it, by the child's mother, after the nurse (who in all probability conceived it to be owing to her carelessness) had left the house. The child had experienced repeated attacks of colic, attended with such an irritable state of the bowels, as to require opiate clysters and opiates to be frequently administered.

Attempts were made, by means of a compress and bandage, to keep the hernia reduced, and allow the aperture through which it had passed to become obliterated; but these proving ineffectual, the plan of applying half of a ball sufficient to cover the opening, and securing it by means of adhesive plaster, as recommended by Sir Astley Cooper, was tried, and with equal want of success. These attempts proving abortive, and the frequent renewal of the bandages being a great source of annoyance to the infant, it was resolved, notwithstanding the arguments advanced by Scarpa and others against the employment of the ligature, to attempt a cure by its means, in the mode adopted by

Accordingly, the child having had the previous day a dose of castor oil, with the assistance of my friend Dr. John Couper, the hernia, which was entirely intestinal, was reduced, and a small round ligature firmly applied around the neck of the sac, as close to the abdomen as possible. This gave little uneasiness; and a warm bath, prescribed in the evening, procured a comfortable night. On the third day a fresh ligature was applied, which produced sloughing of the part: on the fifth a third ligature was applied; and on the seventh day from the operation the included portion dropped off, leaving a small sore, which was dressed with dry caddice, a small compress, and a strip of adhesive plaster.

In another week the sore was entirely healed, but the compress and strap were continued for three weeks longer, at which time the aperture in the umbilicus was as completely and as firmly closed as in children of the same age.

I have since occasionally examined the part, and the cure is complete.

In the umbilical hernia of children, the protruded parts escape directly through the umbilical ring; in that of adults, unless the hernia has existed from infancy, the aperture is in the abdominal parietes near the umbilicus, never in the umbilical ring itself.

What distinguishes the umbilical hernia of childhood from every other species of hernia, is the strong natural tendency to contract, which exists till about the age of nine years, in the aperture through which the viscera protrude; and which contractile tendency, greatest immediately after birth, gradually decreases till about the period mentioned, when it ceases altogether.

In some instances umbilical hernia is congenital, and when so, is not unusually accompanied with malformation of the abdominal muscles. Most frequently, however, it first commences about the age of two or three months\*, and unless attended to is apt to increase in size, and prove a continual source of irritation and annoyance. The inherent tendency in the aperture through which the viscera pass to contract, is in many cases strong enough to produce a natural cure, but more generally the aid of art is requisite.

Two plans of cure have been pro-

\* Desault.

posed, viz. compression and the ligature. By means of the former, the protruded viscera are reduced and the aperture kept closed, either by bandage and compress, or by introducing a segment of a small ball into the opening. It is quite obvious that this latter mode is objectionable, from the ball producing precisely the same kind of resistance to the closure of the aperture as the viscera did. The plan of cure by compression is most generally adopted.

The other method of cure is by the ligature, as in the preceding case; and this may either be employed when compression has failed, or, as was the practice of Desault, in preference to it.

Celsus, in his Chapter de Umbilici Vitiis, describes the mode of curing umbilical hernia by the ligature. He, however, makes no distinction between umbilical and ventral herniæ; and so far from being aware that this operation was likely to be most successful with infants, he expressly forbids its performance on any below the age of seven, or above that of fourteen years\*. The operation by the ligature seems not to have been practised in modern times till Saviard operated, and that successfully, on two children under fourteen months old. His example was not followed, and till the time of Desault was entirely neglected.

Desault revived the use of the ligature in the umbilical hernia of children, an operation founded on a correct idea of the anatomical structure of the part; and especially on the fact that the opening through which the viscera pass has the strong natural contractile tendency already alluded to. It has been alledged that Desault revived the operation described by Celsus; but the absurdity of this idea is rendered apparent by the quotation already made from that author's works. Desault operated on at least fifty patients, none of whom he lost; and from the result of these he has drawn the following conclusions: 1st, That the sooner after birth the operation is performed, the more certainly will a cure be effected; 2dly, That at the age of four years a cure is effected with some degree of difficulty; and, 3dly, That, at nine, the contractile tendency in the

aperture being almost entirely lost, the cure is nearly impossible.

The operation for the cure of umbilical hernia by the ligature has, since the death of Desault, fallen into disuse; and to this the opinion of Scarpa has, in no small degree, contributed.

It has been objected to this operation, that it is sometimes ineffectual. This is certainly the case if performed when the contractile disposition in the ring has ceased; and the same objection may with equal propriety be asserted of the mode by compression.

Others alledge it to be dangerous, especially if a portion of intestine is included in the ligature. When properly and carefully performed, this objection can never occur. Inflammation, irritation, and even death, it is said, have followed the operation, even when every thing has been well done. This is very possible, and yet in Desault's fifty cases no death took place.

When the ligature has succeeded at first, it is alledged the cicatrix has afterwards given way, and a hernia formed a second time.

I confess it was with surprise I found, in the work of Scarpa, this opinion attempted to be supported by a supposed analogy between the operation of the ligature in the umbilical hernia of children, and the barbarous treatment of inguinal hernia by the ligature of the hernial sac and spermatic cord in the adult. It is stated that, in this latter case, the cicatrix is apt to give way, unless a truss is continually worn.

The two cases bear no analogy to each other: in the inguinal hernia the opening possesses no disposition to contract, while that in the umbilical hernia of children does so: and, besides, when a cure has followed the use of the ligature in umbilical hernia, the navel is at least as firm as in those children who never have had this disease.

M. Cartier also, overlooking the anatomical structure of the navel, declares, that since "la cicatrice n'empêche pas toujours la recidive de la hernie inguinale ou crurale chez les sujets qui en ont été opérés, on ne doit pas, à plus forte raison, compter sur une guérison radicale après l'opération de la hernie de l'ombilic chez les enfans."

This opinion is not corroborated by experience; for, as stated above, the navel is as strong after the termination

\* Nam curationi neque infans, neque aut robustus annis aut senex aptus est sed a septimo fere anno ad quartum decimum.—*Celsus de Medicina*, vol. ii. p. 327.



of the cure of the umbilical hernia by the ligature, as it is in those infants who have never had hernia.

Dupuytren has operated on umbilical hernia in children by the ligature many times, and always with the happiest effects; and many cases are scattered over the pages of our numerous periodicals in which the operation met with equal success.

In the umbilical hernia of children, I would, in deference to the expressed opinion of the profession, first attempt the cure by compression merely; if this failed, or was very annoying to the child, from the difficulty of retaining the necessary bandages *in situ*, recourse would be had to the ligature, as in the preceding case. From the experience of Desault, as recorded by Bichat, it is fair to infer that, under proper limitations, this operation is both safe and efficacious; and though, in the greater number of instances, a cure is possible by compression alone, still there are others where this fails, and in which the ligature will succeed\*.

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## MEDICAL GAZETTE.

*Saturday, May 15, 1830.*

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*"Licet omnibus, licet etiam mihi, dignitatem Artis Medicæ tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."*—CICERO.

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### THE KING'S HEALTH.

WE regret to say that his Majesty's health has not improved: the continued disturbance of the circulating and respiratory systems has now been for some time associated with dropsical effusion, and the hope held out at an earlier period that the attack might prove transient, is thus removed.—About ten days ago the operation of puncturing the legs was performed by Mr. Brodie, who has since frequently visited his Majesty. Scarification had previously been practised by Mr. O'Reilly.

As other reports have been industri-

ously circulated, we may take the opportunity of stating, that Mr. Brodie is the only one whose assistance it has been deemed expedient to have recourse to in addition to that of his Majesty's ordinary attendants. The circumstance which gave rise to the report that Mr. Wardrop had been sent for, consisted in his having seen his Majesty on one occasion when on a professional visit to one of the household. The *on dit*, though we can scarcely credit it, is, that Mr. Wardrop subsequently offered to the medical attendants the benefit of his opinion.

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### ANATOMY.

ON Monday last Lord Calthorpe presented a petition from the members of the Westminster Medical Society, praying for some measure in protection of the study of anatomy. His Lordship gave notice that it was his intention, on an early day, to bring forward a bill having for its object to grant the relief sought for by the petitioners.

Already has the note of alarm been sounded, and we shall doubtless have a repetition of the same trash with which the newspapers, with one or two honourable exceptions, teemed last season. An evening paper makes the mere notice the text for a homily, in which the writer wisely remarks that the French are supposed to know their profession tolerably well, and asks why forsooth, should English surgeons be better off than they? Blockhead! had they enjoyed one half the advantages possessed by the French, the event which gave rise to his stupid article would never have occurred.

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### ROYAL WESTERN HOSPITAL.

A MEETING of rather a novel description took place a few days ago, at the Yorkshire Stingo, in reference to the institution having the above imposing designation. We are informed by a gentleman who was present, that the scene of confusion beggars all description. Sir Charles Scudamore attributed the bankrupt state of the funds to the mismanagement of Mr. Sleight. This,

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\* From the Glasgow Medical Journal.

of course, led to recrimination, when Mr. Sleigh observed, with some *naïveté*, that the *success* which the Hospital had met with was entirely owing to his influence and exertions. The extent and nature of the success will be best understood when we mention that there is an immense outstanding debt, with no adequate funds to meet it. To this we may add, for the satisfaction of those connected with the Institution, that a few days ago a gentleman, who had become a governor on the same footing as he might have done to any other charity, but without taking any part in its management, received a letter informing him that as the committee had refused to pay the apothecary's salary, he (the governor) would please to do so, or favour the applicant with the name of his solicitor.

Mr. Sleigh is the gentleman who, backed by the *Lancet* (which, by the way, has since deserted him), a few years ago undertook to reform St. George's Hospital, and save—we really have forgotten how many thousands per annum.

#### SINGULAR EFFECT OF HEAT.

MR. WAKLEY'S dinner party at the Freemason's is postponed on account of the heat of the weather—"a public dinner in the summer is an intolerable nuisance" (*Lancet*, May 8th). It is impossible to imagine a more complete exposure of the estimation in which our opponent is held than this abortive measure has proved: we had but to state with whom it originated, and all by general consent declined to lend it their countenance. To use the words of our contemporary himself, "this, we hope, will prove a salutary lesson to those very silly persons who deny the influence of the independent part of the medical press."

By the way, it is lucky this excuse was made before the weather became so intolerably cold again.

#### NEW ST. GEORGE'S HOSPITAL.

THIS magnificent building advances rapidly, and the front towards Grosvenor-Place, constituting, with what is already finished, two-thirds of the entire pile, will be completed in a few months. A public meeting was held last week in aid of the building fund—his Grace the Archbishop of Canterbury in the chair, supported by numerous noblemen and

gentlemen—on which occasion nearly 2000*l.* were subscribed in the room.

Among the improvements of the new hospital, the arrangements for the convenience and advantage of the pupils are not the least considerable: there is a dead house fitted up as a theatre, where post mortem examinations are regularly carried on; while a museum and library, as well as a lecture-room, are in preparation, and will be completed before October, for the purpose of forming an efficient medical school.

#### PROPOSED TAX ON SURGICAL DIPLOMAS.

*Unto the Honourable the Commons of the United Kingdom of Great Britain and Ireland in Parliament assembled, the humble Petition of the Royal College of Surgeons of Edinburgh;*

SHEWETH,

THAT your petitioners have observed, with the greatest regret and alarm, that it is proposed to Parliament to exact, by a stamp-duty, a tax of 10*l.* upon the "admission or license of any person to be a member or licentiate of any College of Surgeons."

Your petitioners beg leave respectfully, but most earnestly, to represent, that the acquisition of a proper medical and surgical education necessary for all those who undertake the duties of general practice, requires a long period of time, and is attended with a very heavy expense, for which it is long before any adequate return can be obtained, and that the class of young men educated for surgery possess very limited means.

It has long been well known, that the education of those who apply for licenses and diplomas has been in many respects defective; and the different colleges and public bodies who have the power of granting these testimonials, have for some time past, and particularly of late, endeavoured to remedy this defect, by extending the course of study required from those to whom diplomas or licenses are given. The greatest obstacle which your petitioners, and it is believed the other public bodies, have encountered, in effecting this desirable object, has arisen from their knowledge of the difficulties imposed upon young men, by the increase of expense necessarily at-

tending it; and they have carefully avoided adding any thing to this expense, except what may be absolutely required to obtain the improved education. In proof of this they may mention, that no addition has been made for nearly a century to the fee required in obtaining a diploma (which amounts to 6l. 5s.); so that were the proposed stamp-duty imposed, the expense of obtaining this certificate, already it is believed as large as those applying for it can afford, would be nearly trebled.

In these circumstances, this tax could not fail to be most oppressive to those applying for surgical diplomas.

Your petitioners have also to represent, that a diploma in surgery, although at present generally taken by those educated at the different medical and surgical schools, is a mere certificate of qualification, not conferring any privilege, and is not required by law to be possessed by those who practise surgery or medicine in the greater part of the United Kingdom. In these circumstances, there seems great reason to fear, that the increased expense will absolutely prevent a large portion of medical and surgical students from taking a diploma; and they will thus be deprived of the motive to go through the full course of education which they at present follow. In this way, the interests of the community will be materially injured by the diminution of the number of properly qualified practitioners, and by the increase of the already too great number of the ill-educated and irregular; and the efforts which have been made, and are now making, to improve the education of surgeons, will be materially counteracted and impeded.

In the opinion of your petitioners, the proposed duty will operate as a tax for the prevention of the improvement and proper qualification of practitioners.

Your petitioners conceive, that even were the number of diplomas annually granted maintained at its present rate, the amount of the tax would be of little importance to the revenue; and they are satisfied that the diminution which it is likely to occasion, would render it even less productive than is anticipated.

Your petitioners also strongly feel, that the proposed tax, by lessening the number of diplomas, would materially diminish their funds, which they have hitherto applied in promoting medical

and surgical science, by the purchase and formation of extensive and valuable collections of anatomical and pathological preparations, and would involve them in great difficulties in the completion of the undertaking they have entered upon, of building suitable accommodation for rendering these preparations useful to the Medical and Surgical School of Edinburgh—a work which they will not be able to complete, even by the expenditure of their whole present funds, and which they commenced in the belief of the continuance of their present annual income:

Your petitioners therefore earnestly hope, that your Honourable House will take the above statement into your serious consideration, and that you may be induced to abstain from sanctioning a measure which will not, in their opinion, produce any good effect, and which they cannot but regard, for the reasons they have stated, as very oppressive to those engaged in the study of medicine and surgery,—as detrimental to the improvement of medical and surgical education, and therefore injurious to the community,—and as prejudicial to the interests of your petitioners.

May it therefore please your Honourable House to take the above statement into consideration; and to grant your petitioners such relief in the premises as to your Honourable House shall seem meet.

[The Town Council of Edinburgh have also petitioned against the imposition of this tax, and a deputation from the London College of Surgeons have had an interview with the Chancellor of the Exchequer on the subject. There is reason to believe that the measure will be abandoned.—*Ed. Gaz.*]

## ROYAL INSTITUTION,

Friday, May 7, 1830.

BENJAMIN BOND CABELL, ESQ. F.S.A.  
VICE-PRESIDENT, IN THE CHAIR.

### *Geodesical Survey.*

MR. FARADAY “on the measurement of a base in Ireland for the geodesical survey now in progress under the direction of Lieut.-Col. Colby.” Most persons are aware that, for many years, tri-



gonometrical surveys have been carrying on by government, both in this country and in Ireland, to a very considerable extent; but few are conscious of the difficulties which occurred in rendering the measures absolutely accurate, or of the very masterly manner in which these have been overcome, by the construction of a compensation rod; in which the different expansive properties of different metals have been taken advantage of, to correct those variations which changes of temperature will cause under all ordinary circumstances. One of these compensation rods, which has been made for the East India Company, and which we think it was stated would cost 1000*l.*, was exhibited; it consists of a case, about sixteen feet or upwards in length, containing brass and iron rods, supported on rollers, with microscopes, telescopes, &c. attached, so that compensation to the 10,000th of an inch is easily effected; and although mere verbal description can give but a faint outline of it, some idea of its importance may be gained from the observation of M. Arago, the celebrated philosopher, who, when the plan was mentioned to him, retorted, "*Why the principle is perfect, but who can make it?*" Messrs. Sims and Co., the very philosophic mechanicians, have, however, succeeded in constructing the instrument, and with it a new base has been measured in Ireland, by which the accuracy of the previous triangulations has been proved, and a fresh point gained, from which other surveys are carrying on. The plans are drawn on the magnificent scale of a mile to six inches, and 600 persons are employed in the work. It may, perhaps, be thought that, in the measurement of land, and especially of an entire country, a less degree of precision would have sufficed; but when it is stated that, from those surveys carried on in England, Ireland, India, and elsewhere, the correct figure of the earth is to be deduced, and that an error in the first base, though very small, would, when multiplied into all the future calculations, involve an enormous fallacy, the necessity thereof becomes immediately apparent. Among the difficulties occurring, we may mention, that as a river, 460 wide, was included in the first base, the persons employed in the admeasurement were two days breast-high in the water. It is in these geodesical sur-

veys that the brilliant lime light, mentioned as exhibited here a few weeks since, has been employed; and as the sides of the triangles are 60, 85, 93, 98, 101, and that now measuring 107 miles in length, haziness of weather interrupts continually the process, so that those on watch have been anxiously engaged, not only days, but weeks, and even months together, looking through the telescopes, before the heliostadt burst into view.

In the library were the metallic bases of alumina and silica, which, although they have so long eluded the grasp of the chemist, can now be easily obtained from their chlorides. We also noticed some of the ashes brought from a druggist's shop at Pompeii, mentioned in Brande's New Manual of Chemistry; and examined, with much satisfaction, Chancellor's very ingenious new clock escapement.

On Friday next, the subject of Lithotrity, illustrated by experiments with the apparatuses of Civiale and Heurteloup, will be introduced by Mr. Gilbert Burnett.

## HOSPITAL REPORTS.

### EDINBURGH ROYAL INFIRMARY.

#### *Singular Malformation of the Penis—Remedied by Operation.*

F. H. æt. 26, admitted under the care of Mr. Liston, February 9th. The whole extent of the urethra anterior to the pubes is exposed superiorly, there being a wide fissure through the corpora cavernosa and glands. The penis is retracted considerably, so that the posterior part of the fissure lies beneath the symphysis pubis; the integuments over the pubes are of a dusky red colour, and are extended laterally into two loose folds attached to the margins of the posterior extremity of the fissure. The numerous lacunæ of the urethra are beautifully distinct, and the mucous surface is seen covered by their secretion. When the patient makes water, the urine, after emerging from beneath the symphysis pubis, divides into numerous small streams, some of which spread over the sides of the penis, whilst others pass along the exposed urethra. No opportunity has been afforded of observing the appearance of the parts during erection.

The patient cannot be prevailed on to give any satisfactory account of the malformation,

and persists in attributing it to an injury of the back, followed by suppuration in the cellular tissue along the dorsum penis.

11th.—The callous margins of the fissure were carefully pared, and, a catheter having been introduced, the raw surfaces were retained in accurate apposition by several points of interrupted and twisted sutures. The catheter was allowed to remain, and, being fitted with a stop-cock, the urine was thereby evacuated at certain intervals.

On the second day after the operation, there were appearances of slight inflammation around the wound, but union had nevertheless occurred at several points. Urine passed through the catheter.

17th.—The sutures have been removed, and the wound is almost entirely united. The catheter has been withdrawn, but is always replaced when the patient desires to void his urine.

On the 8th of March the union was almost complete, but two minute apertures remained at the posterior part, through which several drops of urine escaped when the patient made water. There had been no constitutional disturbance during the treatment.

In a few days he was dismissed, complete cicatrization having occurred, and the appearance of the penis differing but slightly from that which the organ generally possesses.

He confessed that the malformation was congenital, and that the organ had been incapable of performing its proper functions. He also stated, in further explanation, that his mother, when pregnant, had gone to "draw water," and had been much alarmed by a hare suddenly starting up and placing its paw upon her thigh. This circumstance, he conceived, had caused a deformity of his penis, similar to that of hare lip; and, in confirmation, he stated that a mark of the hare's paw was visible on the inner side of his thigh. Certainly there was, in that situation, a *nævus* intimately resembling the print of a hare's foot.

*Dislocation of Femur on Pubes.—Reduction on the Eightieth Day.*

William M'Kenzie, *æt.* 24, admitted under the care of Mr. Liston, March 5th.

The right lower extremity is considerably shortened, and the toes are much everted. The motions of the thigh are confined, the head of the femur projects in the groin, and, on the thigh being moved, can be distinctly felt rotating on the os pubis towards the outer side of the femoral vessels. The trochanter is depressed, the muscles are somewhat wasted, and the whole limb is much more feeble than the other.

States that, eleven weeks ago, he fell from the rigging of a vessel, a height of nearly fifty feet, and lighted on the right trochanter; immediately afterwards the limb was ob-

served to be shortened and the toes everted, and these appearances have ever since continued. The case had been treated as fracture of the os innominatum without dislocation.

March 8th.—Yesterday the patient was brought into the operating theatre, and Mr. Liston stated that the symptoms of dislocation, upwards and forwards, were so distinctly marked, that there could be no doubt as to its existence; and that, notwithstanding the long period since it had occurred, he considered it his duty to attempt reduction. Powerful extension was accordingly made by pulleys, along with rotation inwards; and after much exertion, reduction was accomplished. A tobacco enema had been previously administered. The knees and ankles were bound together by means of a broad roller, and the patient carried cautiously to bed.

Next day there was considerable swelling of the upper part of the thigh, but it soon disappeared. The bandages were continued for some days; he regained in a great measure the natural motion of his limb, can now support on it a considerable part of his weight, and walks in the ward by the aid of a crutch.

GUY'S HOSPITAL.

*Lumbar Abscess.*

THE three following cases of lumbar abscess were lately treated in this hospital by Mr. Key, and shew the result of a practice which has been strongly advocated of late years by M. Lisfranc, and other continental surgeons, in all chronic abscesses, viz. the application of a large number of leeches at first, which are to be repeated, if necessary, more than once. It is stated, that under this plan of treatment, the matter of these abscesses very frequently becomes absorbed, and that even if this should not take place, still the matter may be safely evacuated by a free opening, and without the risk of that dangerous inflammation of the cyst, and hectic, which too commonly supervene and terminate fatally when this is done without the previous depletion.

CASE I.—Elizabeth Brider, *æt.* 20, unmarried, admitted 9th Dec. 1829.

There is a swelling by the side of the spine in the left loin, which fluctuates, and is very tender. It was first observed only a fortnight ago, though the patient has had pains there for the last three years, more or less. Her health, she says, has been good; she looks well. Pulse 80. She has never yet menstruated, but is subject to periodical headaches.

12th.—Thirty leeches were applied yesterday to the swelling; they bled freely,

and have much relieved the pain; however, the tumor remains as large as before. Pulse 116, soft. Tongue moist.

14th.—Less pain; tumor softer, and a little smaller. Pulse 103; tongue clean; health good.

Rep. Hirudines, xxx. lumbos.

17th.—The swelling is larger, but not nearly so painful; her pulse is very weak, and face pallid from loss of blood. An opening by the lancet was made; about 5jss. of thin pus, mixed with curdy flakes, were evacuated.

22d.—For the last day or two she has had severe headache, with sickness and loss of appetite; a quick, frequent pulse; hot skin; white tongue; bowels confined, and general languor and debility. There is a little discharge from the abscess; not much local pain. For this she took the saline mixture, with hyoseyamus, and a dose of castor oil. This morning there is, besides the above, great sickness. Pain in right side of chest and scrobiculus cordis, aggravated on inspiration, and a dry cough.

Cucurbit. cruentæ lateri dextro, ad 3vj.  
E. Lytta postea. Opii. et Calomel, aa.  
gr. j. h. somni et mane. Rep. Mist.  
Salin.

23d.—Has passed a restless night; her face is flushed; tongue dry and brown; pulse 132, quick and sharp. The pain in chest, difficult and quick breathing, the sickness, and cough, remain as before. Bowels not open. Auscultation shewed crepitation in the middle and lower part of right lung behind, and the mucous rattle above.

Pulv. Rhei. c. Calomel, gr. xv. stat.  
Hydr. Submuriatis, gr. j. n. m. que.  
Julep. Ammon. Acet. c. Liq. Antim.  
tart. ʒxxv. 6tis horis. Omittantur  
alia.

24th.—Had a very bad night; bowels were once open; a fluid stool, nearly black; pulse 130, with some sharpness; tongue dry and coated, less brown, the edges red; the thoracic symptoms seem quite subsided, at least they are not at all complained of. There is now pain and tenderness below the epigastrium, rather indicative of peritonitis. There is severe headache, and great restlessness, amounting at times to slight delirium. The discharge from the abscess is so copious that it was this morning found pouring over the side of the bed. It is very fetid.

Hirudines xx. abdomini st. Cataplasma.  
postea.

Calomel, gr. ij. Extr. Hyoseyami, gr. iij.  
4tis horis.

Vespere.—Abdomen still tender, and there is some tension; bowels not open since last reported; tongue as before; pulse very

small and weak, 128; face bloodless; she is not quite sensible.

25th.—Tenderness less; two scanty stools since last night; otherwise as before.

26th.—Remains nearly the same; bowels not properly open; only a small quantity of brownish fluid in the stools. She rambles a great deal.

Calomel et Opii. aa. gr. j. 6tis horis.

27th.—She is quite insensible, and cannot be made to take any thing, either food or medicine. Bowels not open; tongue not dry, but coated with dirty white, and with red tip and edges. Pulse very small, 150; slight jactitation of the fingers.

28th.—She lies in the same low rambling state; pulse 160; abundant discharge from the abscess. She shrinks from pressure in its neighbourhood. Bowels open yesterday after a dose of castor oil. It was to-day ascertained that she has had a scalding in making water, which now dribbles freely from her; there has, moreover, been on the external genitals a sort of erysipelato-phlegmonoid inflammation, upon which are a few portions of superficial slough. Nothing satisfactory can be learnt about this, except that it began a week ago, the nurse supposes from the heat and moisture of the poultice which has been on the abdomen. She had no discharge or disease in the genitals previously.

Julep. Ammon. subinde. Continr. pilulæ.

Poultice to the abdomen and abscess, and a soft bread poultice to the pudenda.

29th.—This morning she lay quite insensible and pallid; there was subsultus tendinum, and no pulse in the wrists. In the afternoon she died.

Post-mortem Examination 25 hours after  
Death.

Chest.—Both lungs red with blood, and both firmly adherent to the parietes by tough old adhesions, especially the left lung. The right was less so, and about the lower half of this lung, on the pleura and reflected pleura, was seen a layer of recent lymph: here, also, there were a few old adhesions. The lung itself, at this part, was somewhat like a spleen, easily lacerable. There were no tubercles; the heart was sound, and firmly contracted. In the pericardium 3j. of serum.

Abdomen.—Singularly tough old adhesions between the liver and diaphragm, chiefly on the left lobe of the liver, which was torn in attempting the separation. The liver itself was sound; spleen healthy; the intestines distended with flatus, and the small ones contained here and there streaks of nearly black viscid mucus. There was bright redness, in considerable patches, on the mucous



membrane of those small intestines which were in the hypogastric and left iliac regions. There was no trace of recent peritoneal inflammation.

The abscess was now looked for carefully, and found situated behind the quadratus lumborum muscle, between it and the integument behind. The muscle was unaffected; it was lined by a thick, red, granular membrane, and did not appear to be capable of containing more than 3ss. of fluid. No bone was found denuded; but a very accurate examination of this part could not be made as the body was inspected at home, in the presence of the friends of the deceased.

*Uterus and its Appendages.*—The vagina was pervious; there was no hymen. The peritoneal covering of the uterus was red; its substance was very red and inflamed, and its cavity contained 3ss. of pus, like thick cream. The fallopian tubes were knotted, like strings of beads, which were found to be softened tubercles. There was a corpus luteum in the left ovary, and a small hydatid in the broad ligament of the same side.

CASE II.—Robert Cheese, æt. 26, admitted 18th Nov. 1829.

This is a case of lumbar abscess, of common history and characters. The first symptoms of pain and heaviness in the back commenced three months ago, and now there is distinct fluctuation in the right lumbar region. He has the usual scrofulous and hectic aspect; tongue whitish and moist; pulse quick and frequent. It appears that this abscess was called into action three months ago by a fall down a flight of stairs, in which he struck his loins several times against the edge of some of the steps.

Nov. 19th.—To be confined to bed; to take Julep Ammon. Acet.

Hirudines, xxx. lumbi.

22d.—Felt great relief from the leeches: before their application he was in considerable pain, and could not move the hip-joint without increasing it, nor could he bear pressure. A diarrhœa has come on since yesterday, attended with griping and tenesmus.

Ordered, Pulv. Doveri. gr. v. post sing. sedes liquidas.

23d.—Diarrhœa ceased; abscess smaller, and less painful; cheeks flushed; pulse less irritable and strong than when he was admitted; tongue moist, and a little white.

Rep. Hirudines xxx. tumori.

25th.—Easier since the leeches; can now move the hip-joint without so great pain; pulse 92, weak and small; tongue pale and moist; bowels disposed to be relaxed but for the Dover's powder, which he continues to take when necessary.

30th.—Rep. Hirudines xxx lumbi.

Dec. 7th.—He is free from pain, except a little on pressure; no fluctuation can be felt, but the venter ilii is much thickened; pulse 88, quick and compressible; tongue pale, but cleau; sleeps well, has no cough, but perspires a good deal towards morning.

Ordered—Sulph. Quininae gr. j. ex Infus. Rosæ co. ter die.

14th.—Over the back of the ileum a little matter is felt; the ala of the bone is nearly two inches thick, and tender; he is stronger than he was a few days ago.

Hirudines xx supra cristam ilii.

17th.—The last leeches have again relieved him, and a very little matter now remains; the bone is still thickened.

Empl. Lyttæ minimum loco affecto.

21st.—There is matter behind, which appears increasing towards the edge of the longissimus dorsi. His health is improving.

Hirud. xx. parti affectæ.

24th.—Improved by the leeches; there is less matter, and the bone is less thick; pulse frequent, but soft; tongue moist; appetite better.

30th.—No fluctuation can be felt; he continues the quinine.

Feb. 16th.—During the last month he has moxas and a seton over the dorsum ilii, which have almost restored the bone to its natural thickness: he has been up the last few days.

March 18th.—Dismissed, very little thickness of the bone remaining.

He came to the hospital a month afterwards to shew himself: he had had no return of the disease; had gained strength; and had even been able to ride on horseback in his employment of groom.

CASE III.—W. H. Graftey, æt. 18, Nov. 18, 1829; presents the usual characters of a scrofulous habit; there is a distinct fluctuation in the right lumbar region; the abscess is very painful, and his attention was first directed to the part a month or three weeks ago; previous to this, however, he had some enlarged glands in the neck, which have suppurated, and are now open.

19th.—Hirudines xxx tumori.

24th.—Has derived no relief from the leeches.

Rep. Hirudines xxx.

Dec. 5th.—Is not at all benefitted by the leeches; the pain of the abscess is very severe; it appears too enlarging, and is of considerable size.

An opening of nearly an inch long was made, and let out about 3vj. of pus, not the

whole; the pain immediately ceased; the wound was closed, and bandage applied round the body.

Ordered—Julep. Ammon. Acetatis 6tis horis.

7th.—The rest of the matter (about 3vj.) was evacuated, and the wound closed as before.

9th.—He is free from pain, and sleeps well; pulse 120; tongue clean; bowels regular.

Pergat.

15th.—Last night the abscess burst, and a good deal of matter escaped; the first opening had closed.

17th.—Is very weak; there has been but little hectic since the discharge of the matter, which now issues freely into a poultice.

To have nourishment, beef-tea, meat, &c.

21st.—He is improving in health and in strength; there has been little, if any irritation from the opening of so large an abscess.

To continue; and to have porter, a pint daily.

23d.—To-day he complains of pain on pressure on the site of the abscess, and forwards towards the diaphragm. He does not feel so well; bowels not open.

Ordered—Magnesia and Salts in the morning if necessary; large poultice to the abscess; and Træ. Hyoscyanni, 3ss. Magnes Sulph. 3ss. Mist. Salina, 3j. 4tis. horis.

24th.—Severe pain in left hypochondrium, aggravated by a full inspiration; quick pulse; white tongue; hectic flush on the cheek; bowels open.

Hydr. Submur. gr. j. Opii. gr. ss. Antim. tart. gr. ½. 4ta vel. 6ta qq. hora.

28th.—He has been very low and depressed since last report, coughing a good deal, with mucous expectoration, and having pain about the margin of the ribs on left side, increased in inspiration; and also pain in the neighbourhood of the abscess behind, which discharges copiously. Has had hectic flushes, but this morning he is pallid as death; pulse scarcely perceptible; tongue moist, gets no sleep, and is often insensible. He was ordered a little Ammonia, with Træ. Opii. mxx. every two hours, or oftener, and some wine; however, he did not rally, but died on the afternoon of the same day.

The friends would not allow the body to be inspected. T.

#### DECLINED ARTICLE.

To the Editor of the London Medical Gazette.

SIR,

THE following I addressed to the Editor of the Lancet about a fortnight ago; and, as I

anticipated, he has neither inserted nor alluded to it in his veracious journal. If you have a spare corner in the Gazette, pray let this fill it.

I am your obedient servant,

SCOTUS.

"To the Editor of the Lancet.

"Sir,—Richly as the quackery of Mr. Long deserves to be stigmatized and held up to public ridicule, and much as the exercise of that relic of papal usurpation, the power of conferring degrees of all kinds claimed by the Archbishop of Canterbury, is to be deprecated, they cannot justify the wantonly libelling an ancient and respectable University, which in former days, Clarendon says, 'flourished under many excellent scholars and very learned men;' which, in more modern times, can boast of numerous distinguished individuals in every branch of science, who have either filled professors' chairs or received their education within its walls; and which, blameable as it may at one time have been, has long ago adopted and rigidly adhered to regulations, respecting medical degrees, which afford no reasonable ground of complaint.

"The assertion contained in a paragraph of your last number (April 17th), that 'the ancient University of Aberdeen had proffered a degree to Mr.,' or, as you style him, 'Doctor Long,' is without the slightest foundation in truth; and it is much to be regretted that a medical journal should be the medium of conveying to the public such a gratuitous falsehood.

"I am, sir,

"Your obedient servant,

"SCOTUS.

"May 4th, 1830."

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*Mr. Liston's Operations for the Restoration of the Columna Nasi.*

A wrong date was appended to these cases as given in a former number. The first operation was performed in July 1828.

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#### ERRATA.

In our report of Dr. Stevens's paper, page 218, col. 1, for "the blood losing its saline taste—of which circumstance the black colour is found to be a certain proof," read "the blood losing its saline impregnation," &c.

For "the various properties of the blood depend on its saline impregnation," read "various properties," &c.

And after "even when proper means are used," insert "to reduce the excitement," same page, bottom of col. 2.

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W. WILSON, Printer, 57, Skinner-Street, London.

# THE LONDON MEDICAL GAZETTE,

BEING A

WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

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SATURDAY, MAY 15, 1830.

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## LECTURES ON SURGERY,

*Delivered at St. Bartholomew's Hospital,*

By WILLIAM LAWRENCE, F.R.S.

— from 232.

### LECTURE XLI.

#### VASCULAR SYSTEM.

*Wounds of Arteries, and various methods of arresting Hæmorrhage.*

Loss of blood, or, as it is technically called, *hæmorrhage*, is one of the circumstances attendant on wounds which is sometimes dangerous, and even fatal; while it is always alarming to patients and to those around them, especially if they do not understand what ought to be done. The danger of bleeding is not confined to the very time at which the injury is received, or immediately after it; for the bleeding that immediately follows a wound may stop, but the hæmorrhage may be renewed at some distance of time, and the patient may die from its recurrence. Hence it is of great importance to adopt immediately such effective means in the wounds of blood vessels as shall prevent these dangerous consequences. Ancient surgery was very defective in this respect; for although we find in Galen and in other writers mention made incidentally of tying arteries, it does not appear that the practice was adopted generally; it seems, indeed, to have been rarely employed, and not to have passed into general use, which we should expect that it would have done, if the nature of so simple and effective a mode of proceeding had been well understood. Thus we find that the older surgeons, for the purpose of arresting hæmorrhage, employed *compression*, the application of substances possessing or supposed to possess *styptic* properties, and even the *actual cautery*. Now we cannot wonder that they were afraid of performing any of

the great operations, when their means of remedying bleeding were so very imperfect—when the only way in which they could prevent a person from bleeding to death, after amputation for example, consisted in burning the surface of the stump, in order to sear and close up the divided vessels.

The celebrated French surgeon, Ambrose Paré, has the honour, if not of inventing, at all events of re-introducing into practice, and bringing into general use, the plan of tying wounded blood-vessels;—and when we consider how important this is—how much better many operations must have been performed with the advantages derived from this mode of arresting the hæmorrhage, and how much simpler the treatment of wounds must have been under this mode of proceeding, we cannot be surprised that this surgeon should have considered that the thought of employing ligatures came to him by a kind of inspiration.

The process adopted by nature for arresting hæmorrhage, and the mode in which ligatures act in accomplishing the same purpose—in fact all the circumstances connected with bleeding, and the mode of arresting it, have been very carefully investigated in modern times, so that we may consider this part of surgery as brought nearly to a state of perfection.

#### *Arterial Hæmorrhage.*

*Arterial hæmorrhage* is distinguished from venous by two circumstances—*first*, by the colour of the blood, which is a bright scarlet; *secondly*, by the circumstance of it being thrown out in jets. A wounded artery is said, technically, to bleed *per saltum*, which means by leaps or jumps. Now we cannot understand this phrase quite in a literal sense, for the blood is not thrown out exactly in a series of single projections: the stream of blood from a wounded artery, like that from a wounded vein, is uninterrupted; but the stream rises higher, or is projected farther from the body at each time that the left ventricle acts. There is no interruption



to the stream—there is a constant current of blood issuing from the artery; but it is thrown forward more forcibly at every contraction of the left ventricle of the heart. The quantity of blood that is lost in a given time, and the effect which the loss of blood will produce on the system, depend chiefly on the size of the vessel that is wounded. A complete division or large wound of the femoral or the radial artery, of the common carotid, or external or internal carotid, generally produces so great a loss of blood within so short a time, as to be suddenly, in fact almost immediately fatal. This observation you will not understand to be invariably and universally true; for the bleeding of a wounded vessel is in some measure modified by the nature of the division of the external parts. If the external wound be free, so as to allow an easy escape to the blood, then a wound of the vessels I have mentioned to you will be suddenly fatal; but if the external wound be small, so that the escape of blood is impeded, then the event may be different; and indeed I remember to have seen a case in which the brachial artery was cut across on the inside of the arm, at the same time a free division was made of the external parts, where there was a considerable loss of blood, so that the individual fainted; but the orifice of the artery was now tied, and the patient did not die from the bleeding.

Sometimes from a wound of one of these vessels the patient dies almost immediately; in other instances death does not take place quite so suddenly. Thus in an instance where the ligature came off the femoral artery after amputation, the gentleman in whom it occurred made a noise, which roused the nurse who was in his room, but by the time she had come to the side of the bed—he was dead: a profuse flow of blood had taken place, and the gentleman probably died in the course of one or two minutes. I remember an instance of a ligature giving way from the femoral artery in a lady in whom it had been applied for an aneurism, and in that instance death did not ensue till about an hour after the accident.

When an artery of the second order is wounded or divided—for instance, when either of the three arteries of the leg, the anterior or posterior tibial, or the peroneal; or any of the three arteries of the fore-arm, the radial, the ulnar, or interosseous; or any of the primary divisions of the external carotid—profuse hæmorrhage ensues, and a considerable quantity of blood is lost in a short time; but the individual faints, the bleeding stops, and death does not ensue immediately: the patient recovers, bleeding will come on again, and at a distant time repetition of bleeding may take place, and thus the patient may be destroyed ultimately by the repeated losses of blood.

When arteries of smaller size are divided, they bleed more or less freely at the time; but the hæmorrhage ceases spontaneously, and no further ill consequences ensue. It may sometimes happen that a wound of an artery of the second order, such as the radial, the ulnar, or the interosseal, or one of the arteries of the leg, may not be attended with an ultimately fatal effect, although no means are adopted to stop the hæmorrhage; the bleeding may stop, and the orifice of the artery may be obliterated by a natural process, without any recurrence of hæmorrhage. In the case of amputation of a limb, we see the remark that I have now made exemplified: we find it necessary to tie, perhaps, from one to six arteries—but the rest, which must of course be extremely numerous in a wound of this kind, cease bleeding of themselves, and no farther hæmorrhage takes place from them; they cease to bleed spontaneously—certain changes occur by which the hæmorrhage is arrested. Sometimes in the amputation of the thigh, we are only obliged to tie the femoral artery. I have known an amputation of the fore-arm and only one artery tied; and also only one tied in the amputation of the leg; the hæmorrhage from all the rest having been arrested by the spontaneous process.

You will, then, naturally inquire how it is that the bleeding of a wounded artery stops spontaneously? What is the course adopted by nature for arresting the flow of blood under these circumstances? The orifice of the divided vessel contracts, becomes smaller and smaller, and ultimately seems to close entirely. This natural contraction of the divided orifice of the artery is favoured by exposure to the air, or by the application of cold water by sponging; so that when we have exposed a wound, such as that made in removing the breast, or the wound of amputation, we shall, perhaps, find that the bleeding has entirely ceased. But when we bring the parts together, and more especially if they are covered by a considerable quantity of dressing or cloths, so as to produce heat, hæmorrhage will recur again from the vessels that had previously ceased to bleed. Then at the same time that the divided orifices of the vessels contract, the blood coagulates in their extremities, and a clot forms which resists the efflux of blood from the artery. A third circumstance has been mentioned as contributing to the natural suspension of hæmorrhage—namely, the retraction of the divided artery into the cellular sheath that surrounds it. This has been observed in experiments on animals; and I must state to you, that those changes on which the natural suspension of hæmorrhage depends, take place more powerfully in animals than they do in the human subject. The brachial, the femoral, and the common carotid arteries, may be divided in

the dog with impunity. Generally a considerable gush of blood takes place from these vessels; but the effusion of blood diminishes, then stops, the artery is closed, and the animal recovers. Under such circumstances, it is found that the ends of the divided vessels are retracted. You are aware that arteries are generally surrounded by a loose cellular texture, which connects them to the surrounding parts. This cellular texture is very loose, and admits the ends of the vessels. Now the vessels which are divided being withdrawn to a considerable distance from each other, under such circumstances, when blood is effused from a divided artery it passes into the cellular sheath, and coagulates. This forms a plug at the external orifice of the vessels, which assists in arresting the hæmorrhage.

Now it is difficult to say whether this process takes place in the smaller arteries; indeed I apprehend we may say clearly that the cessation of hæmorrhage does not, in them, depend upon this process; for you observe, in amputation, the flow of blood taking place from an artery in a considerable stream, which gradually diminishes in size till it stops, although the orifice of the artery is still in view, and therefore not at all retracted. We see, however, that where the arteries are seated in textures of a dense unyielding kind, they bleed more obstinately; the hæmorrhage is not stopped so quickly as when they are seated in textures of a looser sort, that admit of their retraction. Thus, in an operation on the female breast, when a part of the mammary gland is divided, we shall find that small vessels will continue obstinately bleeding in the dense texture of the gland, so that we are obliged to put a ligature to them. The dense, compact substance by which they are surrounded, prevents them from retracting. The same has been observed in the skin. You sometimes find a small artery in the texture of the skin continue bleeding, under circumstances where the arteries in a loose tissue would stop naturally. It is not impossible, therefore, that the retraction of the orifice of a wounded artery, in certain circumstances, may contribute to the suspension of hæmorrhage. Such are the circumstances which are considered to take place as the natural means of arresting bleeding. The contraction of the orifice, the coagulation of blood within it, and the retraction of the end of the vessel into the cellular sheath; and by means of this process, in many instances, hæmorrhage naturally stops, in complete division even of arteries of considerable magnitude.

I should, however, have observed to you, in respect to the natural means of stopping hæmorrhage, that those changes on which the effect depends are materially favoured by the state of faintness which is produced by

the loss of blood. The diminished force with which the blood is projected into the arteries, under the state of faintness, assists in the natural changes by which hæmorrhage is stopped. The coagulation of the blood particularly, in the orifice of a divided vessel, takes place more favourably under the reduced strength of the circulation. For this reason the condition of faintness may be considered as one of the natural means by which hæmorrhage is stopped; and hence, under ordinary circumstances, we should not be at all alarmed by its occurrence; we should not immediately attempt, as persons are apt to do, to raise the circulation by the administration of stimulants. Under such circumstances, we should rather regard the occurrence of fainting as part of the natural process by which the hæmorrhage is to be arrested.

The surgical means which are adopted to stop the flow of blood from divided arteries, may be arranged under three heads—*pressure, styptics, and ligatures.*

In the alarm which persons entertain, and almost instinctively feel, at the occurrence of serious hæmorrhage, those who are ignorant of anatomy and physiology seem to lose their presence of mind completely, and to neglect even the most obvious means for arresting the flow of blood. Although considerable vessels may have been divided, they might be stopped simply by the pressure of the finger; and yet persons see the blood flow from such a wound and do not take this obvious means of arresting it. Pressure with the point of the finger on the orifice of the divided vessel, or on the wound if it be small, or tying a handkerchief round the wounded part, with some tightness, will at all events arrest the blood for a time, till more effectual means can be adopted. Heretofore, when the application of ligatures was not understood, pressure was one of the principal methods, not merely as a *temporary* means, but for *permanently* arresting hæmorrhage. Sponge, or lint, or portions of linen, were laid upon the opening of a divided vessel, or wound; and these were bound firmly on the part by bandages; this pressure being continued until the wounded vessel was supposed to have united. It is very difficult to apply pressure to a wound of any considerable artery, so as to command the flow of blood through the vessel in such a way as is necessary, in order to accomplish the perfect cure of the wound. It is difficult to apply pressure in such a manner as to keep up permanently the degree of force on the wounded part necessary to accomplish this purpose. There are but few situations in which an artery is so situated, in respect to some bone or other firm part, as to admit of being effectually compressed; and if we use a degree of force in the application of bandages, sufficient to

bring the sides of the wounded artery together, we shall compress the whole of the limb in such a way as to endanger its mortification;—at all events, the application of pressure in this way irritates the wound, tends to produce inflammation in it, and will cause swelling of the limb generally. Thus it will bring on a state of the wound and of the limb in which the disposition to bleeding will be increased rather than diminished, while the slightest motion of the limb will be sufficient to disturb the pressure upon the wounded artery; so that, for these various reasons, pressure can by no means be trusted to as an effective method of arresting the flow of blood from an artery of considerable size. It is found, indeed, so very insecure, that it has generally been abandoned as a permanent means of arresting hæmorrhage. There may, perhaps, be some few instances in which pressure may be employed, but they are by no means frequent. In wounds of the temporal artery, more particularly in opening that vessel to take away blood, the artery being situated on a bone, it can be pretty effectually compressed; and in this case we find that pressure may answer the purpose. In a small wound of a large artery it is sometimes found that pressure will answer the desired purpose; and, as an example of this, I may mention the wound that is occasionally made in the brachial artery, in the operation of phlebotomy. I remember seeing an instance in which there was every reason to suppose that the brachial artery was punctured—that is, when the vein was wounded in bleeding, there was observed to come out from it a stream which was partly of a bright scarlet and partly of the dark colour of venous blood. The contrast in the colour of the two component parts of the stream was so great, that there could be no doubt upon the subject. However, in this instance, the quantity of blood that was desired was not obtained by the opening of the vein, even with this additional aperture of the artery; the blood stopped of itself, before as much had flowed as it was wished to take. A compress was placed upon the wound, and large portions of folded lint were applied, gradually increasing in size, so as to form a thick graduated compress over it. Another covering was laid along the trunk of the brachial artery, and this firmly bound on, a bandage being applied from the wrist upwards over the whole of the limb. This was the mode adopted for producing pressure in the instance that I have mentioned, and I may observe that it was completely effectual; no further loss of blood took place, nor did any aneurismal swelling occur. There may, therefore, be some few instances which will constitute exceptions to the general rule respecting the application of pressure as a means for arresting hæmorrhage from a wounded artery.

It has been said, that pressure may be employed where hæmorrhage takes place from a number of small vessels. I believe you find in general, under such circumstances, that the most advantageous mode of proceeding will be to expose the wound freely to the air, and sponge it with cold water. That generally succeeds in checking the flow of blood from small vessels. It has also been said, that pressure may be adopted where bleeding takes place from a surface generally. This, in fact, is hardly an example of arterial hæmorrhage; but it sometimes happens that the blood seems to flow almost generally from the whole of a denuded surface. This is what the French call *suintement de sang*. It is possible that there may be circumstances of that kind, under which pressure may be sufficient to restrain hæmorrhage, but you will immediately observe that these are different cases from those to which our present observations apply, viz. wounds of arteries.

I may state to you generally that pressure is neither a secure, nor in any respect an eligible means of restraining hæmorrhage when it proceeds from an arterial trunk of considerable size. As a temporary mode of arresting hæmorrhage, we may adopt pressure of the arterial trunk of a limb above the situation where the wound has been inflicted. Thus, if a wound be received in any part of the thigh, you press the femoral artery where it passes the crural arch of the groin. In the same way you employ pressure, with the tourniquet, to restrain hæmorrhage during amputation. This is a mode of stopping the flow of blood at the time, and I may mention to you that pressure employed in this way is a complete and effectual mode of checking hæmorrhage at the moment; and I state this the rather because a very ingenious and lively writer, and indeed a man of great talent, took much pains to convince the world that we could not, by pressure, command the flow of blood through a large artery. I allude to the late Mr. John Bell. His doctrine was, that we could not succeed in stopping bleeding by pressure upon an arterial trunk; and he says, that when a person presses on the groin, the blood flows through the artery just as if no pressure were made. How he came to this conclusion I am at a loss to understand, for I know this, that you may take the iliac artery between the finger and thumb, and command the flow of blood through it without great force; and in other circumstances it is well known (as in the amputation of the shoulder joint) we trust to the pressure on the subclavian artery to command the flow of blood, and we find the pressure perfectly effectual. In cases of wounds, either in the arm or leg, where bleeding has occurred, and we suspect it may occur again, we sometimes employ the



tourniquet, leaving it round the limb, to be tightened if bleeding come on. But the pressure thus applied can only be continued a short time. The tourniquet affects the circulation of the blood through the veins as well as arteries; it produces swelling of the limb; and if you continue it, the swelling so produced becomes painful—in fact it produces a state of the limb which will terminate in mortification. This kind of pressure, therefore, is only to be regarded as of temporary application.

Great confidence has been placed on the operation of substances called *styptics* in arresting bleeding. The exposure of a wound to the open air, and the application of cold to it by sponging with cold water, have a powerful influence in checking bleeding; and thus far these may be considered as styptics. But when we speak of styptics technically, we mean certain substances which are supposed to act in effecting a contraction of the orifices of the divided vessels, and thus stopping the flow of blood through them—substances of an astringent nature. Alum, and the sulphate of zinc, are, perhaps, those on which the most reliance can be placed. Oil of turpentine has been used for the same purpose, but probably there are no substances that are more certain, as styptics, than a saturated solution of alum, or the sulphate of zinc. We cannot, however, rely upon these, or any other styptics, for arresting the bleeding of an artery of considerable magnitude. They may check bleeding from small vessels, but it would be extremely unsafe to trust to them in a case where an artery of any magnitude, such as the radial, the ulnar, or, I might say, one of the digital arteries, was divided.

There are certain cases where divided vessels, in consequence of being deeply seated—so placed that we cannot get at them without cutting or interfering with parts of importance; there are, I say, certain cases of this kind in which we might depart from the general rule, and employ styptics; but then the employment of such means constitutes an exception from the general proceeding. On such an occasion I should, for my own part, be inclined to employ, in preference to other means, a saturated solution of alum; and the mode I should adopt would be to dip lint into the solution, sponging the wound clean, so that I might lay such lint upon the vessels that were bleeding, and then placing compresses externally; so that by means of a bandage over all, the wound might be subjected at once to the combined influence of the styptic and pressure. Under certain circumstances, perhaps this mode of proceeding may be eligible. I have known bleeding that has been troublesome stopped by the application of a piece of lint dipped in alum and Armenian bole, in equal parts, and finely powdered. Both these have been supposed to possess styptic properties; and when lint, dipped in them, has been bound upon the

part firmly, the blood will form an encrustation, or cake, over the surface, which is allowed to remain till the danger of hæmorrhage shall have gone by.

The only safe mode of proceeding, however, in order to restrain hæmorrhage of wounded arteries, is *the application of a ligature*. You will readily understand, that if the orifice of a divided artery be firmly tied, no blood can flow from it. The application of a ligature, therefore, is an effectual remedy for bleeding at the moment, and is followed by such changes in the state of the part as prevents any subsequent recurrence of hæmorrhage. The ligature which is applied separates of itself from the vessels at various periods of time, from four or five days to three or four weeks; and when we come to examine the end of the vessel on which the ligature has been applied, we find it is firmly closed; and, in fact, not only that the divided orifice is united, but that a portion of the tube, extending from the ligature up to the situation where the first branch is given off from the artery above the wound, is not only contracted but obliterated, and converted into a firm round substance. Such is the effect of the application of a ligature to an artery: so that you observe it is very effectual, not only as an immediate means of arresting hæmorrhage, but as also preventing the future recurrence of bleeding.

Now when we apply a ligature to an artery, supposing we employ one of the ordinary kind, and supposing we employ the degree of force that is commonly used in tightening them, the effect that we find produced is, that the two inner coats of the vessel, namely, the internal and middle coats, are divided or cut through. When you take off the ligature, after having drawn it in this way, and look at the vessel that it has been applied to, it appears as if you had cut through these coats with a knife. The external, or cellular coat being of a much tougher nature, is not divided by the application of the ligature; it is so firm in texture that it cannot be divided by any degree of force that you can apply. Such is the effect usually produced by tying a ligature round an artery.

[Mr. Lawrence here illustrated the immediate effects of the ligature by tying portions of various arteries, and exhibiting them.]

Thus you have an incised wound, if you may so call it, in the internal and middle coats of the vessel, and you have the edges of the wound kept in contact by the application of the ligature. The same circumstance takes place here as in the case of a wound of any other of the soft textures of the body; that is, coagulating lymph is effused; it becomes organized; and thus forms the medium of union by which the sides of the vessel are permanently held together and closed; it is, in fact, just the same process that takes place in a wound in any other soft part. The accomplishment of this process, in the case of a

wounded artery, is assisted by the coagulation of the blood in the extremity of the wounded vessel. The blood being at rest in the extremity of the vessel, coagulates, and the clot that is thus formed protects the extremity of the artery during the time that the effusion of coagulating lymph, and its subsequent organization, are going on. The clot of blood within the vessel prevents the effused coagulable lymph from being washed away; it prevents the union from being disturbed by the impetus of the circulation; it is, therefore, an auxiliary circumstance in the natural process on which the union of the divided artery depends, but it is not absolutely essential to it. We find that this coagulum extends up to where the first collateral branch is given off;—now it may happen that a vessel may be wounded or tied close to the origin of a branch; in that case no coagulum forms on the inside, and yet the vessel may be united. But it must be observed that the process of union is more precarious under such circumstances; it is more liable to be injured; and the instances in which secondary hæmorrhage takes place are more common.

When we see the mode in which this operation is to be effected, we can easily determine what kind of ligature should be employed in tying the arteries, and in what mode they should be used. Your object is of course to produce a small and clean cut of the internal and middle coats of the vessel. For this purpose we use a small, round, and firm ligature; for a ligature of that kind will produce a neat and clean cut. If you use a large ligature, you not only divide the internal and middle coats, but at the same time bruise them, and produce a considerable detachment of the external coat. You will find in the aorta which I tied with a rough piece of string just now, that the internal and middle coats are considerably separated from the external coat, and in fact, if you were to use a ligature of this kind, and put it on an artery, it is by no means impossible that you would divide the external coats also with it. The ligature, then, that you employ may be made of any substance you like, provided it possess these properties;—small in size, firm, and round. Silk ligatures, perhaps, will answer best, and usually that kind of silk which is called in the trade “dentists’ silk,” which is dense and firm, is preferred. If you use that, you can scarcely break it by any force you can employ with the fingers and thumbs.—[Mr. Lawrence here exhibited specimens of this kind of silk.]

Heretofore, before the process by which the suspension of hæmorrhage and the union of vessels was understood, it was very commonly recommended to employ large flat ligatures, and not to draw them very

tight, but merely to draw them so as to approximate the sides of the vessel without actually cutting them; indeed, it appears that the fact of the division of the internal and middle coats by ligature, was not noticed till the time of Desault. Dr. John Thompson, of Edinburgh, by whom this fact has been stated, mentions that he learnt it from Desault, and it was not generally known here till it was stated by him. You will observe, therefore, that the recommendation of the employment of large ligatures, and the injunction to draw them only so as to bring the sides of the vessels into contact without injuring the coats, proceeds on an ignorance of the process which takes place in arteries that have been tied.

I would not venture to say that an artery may not actually be cut through by a ligature drawn very tightly under certain circumstances. There are conditions of the arterial coats, especially in old persons, in which a deposition takes place,—a kind of cartilaginous substance is formed, or the artery becomes otherwise changed in such a way as to lose more or less of its natural elasticity and power of resistance. They become more brittle than natural, and it may be possible, therefore, that the arteries when they have thus been changed may, by the application of a large ligature drawn with great force, be cut through altogether. I have been speaking of instances in which we have occasion to employ ligatures in consequence of wounds, whether accidental or from operation, such as amputation, and I can venture to state that the smallest of the silk ligatures which I have shewn you, may be applied safely with the utmost degree of force that you can give it with your fingers, without the risk of cutting through the whole coats of the vessel, though you observe it will divide the internal and middle coats in the way that I have already pointed out.

The ligature should be applied to the arteries alone, and ought not to include any other part. If you include the surrounding parts, such as a nerve, a vein, or any other substance, you cannot calculate so confidently on producing the particular effect which you wish to produce on the artery; and if you include nerves or veins, you run the risk of serious ill consequences of another kind. It is desirable, therefore, in all cases to apply the ligature to the artery alone. This can easily be done in arteries of large size, because they are surrounded by a loose cellular sheath, which admits of their being drawn out from the surrounding parts by an ordinary pair of forceps, or an instrument called a *tenaculum*. You take hold of the end of the wounded vessel, draw it out, and apply the ligature immediately in contact with it, previously separating with your nail the vein or

nerve accompanying the artery. The ordinary forceps is used for this purpose, or the tenaculum, which is a pointed instrument, semicircular in shape,—or there are improvements of the tenaculum, one of which bears the name of Assalini's, which is so contrived as to admit of being employed to take up the arteries when you have not got an assistant: you take hold of the artery with the instrument perpendicularly, and it will keep its hold: there is a spring by which the branches of the instrument are kept together, and it will take up a very small vessel.—[Mr. Lawrence here shewed two instruments, one of the description just mentioned, and one where the branches were kept together by a slide, by which he said the orifice of the vessel might be securely held.]

With respect, then, to arteries of such a size as to admit of being drawn out, you use the forceps more especially for that purpose. In instances of arteries that run in the substance of muscles, or those that run in the texture of parts of a more solid kind, you find it necessary, with a sharp tenaculum, to transfix the orifice of the artery with some portion of the surrounding textures, including as little of them as possible in your ligature. When you have secured the bleeding arteries in this way, you generally cut off one end of the ligature close to the knot, leaving the other entire, and hanging out of the wound, and when by the process of separation the ligature has been detached, it falls off of itself. It is expedient generally to leave the ligature till it is thus naturally detached. In the case of an artery of large size, if you wished to draw the ligature off, and were to use force in pulling it away, you might disturb the end of the vessel, and thus interfere with the process going on for closing its orifice. The ulceration of the external coat of the artery, by which the ligature has been detached, takes place, as I mentioned to you, within various periods; it sometimes occurs in as short a period as five or six days, and sometimes it takes three weeks or more. If the separation of the ligature is delayed beyond that time, you may draw it slightly each day, till you find it gives way and comes off.

Attempts have been made to get rid of the irritation which the presence of a ligature in a wound creates, by cutting off both ends close to the knot; and I have done this in many instances after amputation, castration, removal of the breast, operations for aneurism, and various others, and I have not seen any ill consequences result from it. In many instances of that kind the wound unites, and the ligature seems to remain in the situation in which it was left, without producing irritation. In some cases, after a short time, a small point forms at the edge of the cicatrix, and a little matter escapes, and the ligature comes away. In every in-

stance where you see a reason to expect that the wound will not unite by adhesion, you can cut off the two ends of the ligature and leave the knot in the wound, because the knot then comes away in the suppuration. If the wound is likely to unite generally by adhesion, perhaps, on the whole, the best and the safest method is to cut off only one end of the ligature, and leave the other hanging out of the wound.

## LECTURE XLII.

*Application of Ligatures, continued—Armed Needle—Necessity of tying both ends of the Artery—Partial division of Arteries—Diffused False Aneurism—True Aneurism.*

WE are sometimes obliged, gentlemen, to employ the *needle* and *ligature* in order to arrest arterial hæmorrhage. When the bleeding orifice of the vessel is deeply seated, or when, from other circumstances, we find great difficulty in securing the very orifice itself, in such cases we take a large curved needle, armed with a strong ligature, and pass it through, so as to include a considerable thickness of the parts embracing the vessels that are divided, and we then tie the whole together. Now this, which must be regarded as rather a coarse kind of proceeding, is only to be understood as an occasional expedient, where we cannot succeed in what should be our constant effort—that of securing the immediate orifice of the vessel that affords the hæmorrhage.

When an artery is divided, particularly in the extremities, it is necessary, or at all events it may be said to be proper, to tie both ends of the wounded vessel. Frequently we find that bleeding takes place, both from the extremity of the vessel which is nearest to the heart, and from that which is most remote. In the arm and forearm, where the arterial communications are particularly free, we find this take place very frequently, and also in the scalp: when the temporal, or occipital artery is wounded, we shall find the vessel bleed as freely from the orifice most remote from the heart, as it does from that which is nearest it. Under these circumstances, it is a matter of obvious necessity to tie both orifices of the wounded vessel. But it may be laid down, as a *general rule*, that you ought to do this even although no bleeding should take place, from the farthest opening at the time that you apply the ligature; for although no hæmorrhage may be present at that time, yet it not uncommonly happens, when the circulation becomes powerful, that bleeding does come on afterwards, and you may have, from the inferior or more remote orifice of the vessel, subsequent hæmorrhage, that may even prove fatal.

I remember an instance of a person brought



into this hospital, many years ago, who had received a very considerable and deep wound on the inside of the arm, a little above the elbow. This had occurred in an affray in the street. Profuse bleeding took place, and he was carried into a neighbouring house, where a surgeon, who was near the spot, came to his assistance, tied the artery, and then sent him to this hospital. When he arrived here, he was cold, and almost senseless; extremely reduced by the loss of blood; and a ligature was observed in the wound. No bleeding at that time took place; and it was necessary to give him a little wine, and employ other means to restore the circulation. The edges of the wound were brought together as a simple incision would be, and the patient soon recovered from the immediate effects of the loss of blood. The wound seemed to be uniting very favourably, and all the circumstances appeared quite as one could wish, when, on the sixth day after admission into the hospital, profuse hæmorrhage took place. This happened during the night, and the bleeding was not discovered till the morning, when it was found that he had lost a very large quantity of blood; so much so, indeed, that it had soaked through the bed and bedding, and was dropping on the floor of the ward. When the house-surgeon saw the patient in the morning, as soon as the hæmorrhage was discovered, he opened the wound, and found no bleeding whatever. In the course of this examination, the ligature, which had been on some vessel in the first instance, came away, but no bleeding then occurred, and the wound was closed. On the following day, however, a profuse hæmorrhage came on again, and under this the patient died. I examined the body myself; (I must observe that the patient was not under my care, it was long before I was surgeon to the hospital;) I found a deep wound, that extended to the bone, and had divided the brachial artery, with the accompanying veins and nerves. The extremity nearest to the heart, on which the ligature had been placed, was closed. The orifice was filled by a coagulum, so that no blood could have come from it; but the inferior extremity of the artery was open, and no doubt, in this case, the patient bled to death from the lower orifice of the wounded vessel.

The observations that I have now made to you relate to the course which you are to pursue in treating wounds of the arteries when the trunk is completely divided transversely; but there may be an imperfect transverse division of the artery, or the artery may be wounded longitudinally, or it may be wounded obliquely. In any of these cases you must follow the course that I have already mentioned, that is, you must tie the artery above and below the situation of the

wound. This plan of tying the artery is still more necessary in these partial wounds than in the complete division of the tube. The partially wounded artery is placed under less favourable circumstances, as regards the natural cessation of hæmorrhage, than a completely divided vessel. A partially divided artery cannot retract into the sheath; the orifice of a partially divided artery does not contract towards a central point, so as to close it up. Thus we find, that the contraction and retraction of the arteries—the two circumstances principally conducing to the natural cessation of hæmorrhage, are both wanting. It is true that these partial wounds of an arterial tube, like a complete division, may, in some instances, admit of a spontaneous cure, particularly if the external wound be small. If effective compression be made upon the arterial trunk; if the limb be kept completely at rest; if the patient should altogether remain very quiet; and if such a course generally should be pursued as is calculated to diminish the force of the circulation, under such circumstances either entire or partial wounds of arterial tubes, even of considerable size, may be spontaneously cured; but such is an exception from the ordinary course, and we cannot calculate upon it as a regular occurrence; nor should the fact that such cures do occasionally happen, lead us to neglect the general rule of tying the wounded artery, that being the only mode by which we can place the patient in safety. In some instances, where a puncture of an artery has been made, and been very small, (such, for example, as a wound in the brachial artery, which occurs in bleeding,) by the employment of pressure, and other means, the wound in the artery closes without the tube being obliterated, and it is healed much like the wounds which unite by adhesion in other textures of the body. But these are rare occurrences; and, generally speaking, whenever spontaneous cure does take place in the partial wounds of arterial tubes, it involves the obliteration of the vessel in the situation where the wound has been received.

The observations that I have now made to you relate to those wounds of arteries which are accompanied by free external wounds, where there is complete exposure, so that we can find out the bleeding vessel, and do what we please with respect to it. But in many instances arteries are wounded by punctures. You have a wound of a considerable artery where the external orifice is small, and seated at a considerable distance from the division in the blood-vessel. Under such circumstances, a profuse rush of blood takes place at the time that the injury is received, supposing that a large artery be wounded; but as the blood escapes more slowly in proportion as the circulation becomes enfeebled, it at last coagulates in the

track of the wound, and thus prevents further hæmorrhage. The patient faints, and a much less quantity of blood is lost than would have been the case had there been a free external aperture in the neighbourhood of the wound in the artery.

In this way you may have the femoral, or even the axillary artery, wounded in any part of their course, and yet the patient may not bleed to death. The blood does not escape freely through the wound; and thus the hæmorrhage is stopped before such a quantity is lost as produces a fatal result. In the reduced state of the circulation which takes place, ending in fainting, a coagulum may probably form in the orifice of the wounded vessel, and this stops the bleeding for a time. The patient, however, recovers; the circulation becomes nearly natural again; the coagulum is forced out, and the bleeding may return after one, two, or more days. Profuse hæmorrhage may come on again, which hæmorrhage is repeated from time to time; and in the end, either the surgeon cuts down, and secures the wounded vessel, or the patient dies from these repeated losses of blood.

Sometimes the bleeding from the wounded artery is checked so long, either by a coagulum forming in the tube, or in the track of the wound, that the external opening absolutely becomes quite united and healed; yet the artery, although it does not bleed externally, bleeds internally. Blood is injected into the cellular substance immediately surrounding the vessels and their sheaths; it is effused into the cellular substance between the muscles of the neighbouring parts; and thus tumefaction arises, first, in the neighbourhood of the wounded vessel, and then it extends, more or less, to the soft parts around it, often increasing the size of the limb to a very considerable magnitude. In this latter case, the swelling, I should observe, particularly in the immediate neighbourhood of the artery, pulsates. This is the kind of case which has technically been called a *diffused, false aneurism*. The tumour that takes place has this character, in common with aneurism—swelling, with pulsation. But the swelling is not circumscribed; it is made up of an irregular injection of blood into the cellular texture, immediately surrounding the artery, and which extends to the various contiguous parts. Thus it is said to be a *diffused*, in contra-distinction to a *circumscribed* false aneurism. In this way you may find that nearly the whole of the cellular texture of the limb may become distended with blood injected into it from the wounded artery; and you may have tumefaction which occupies nearly the whole of the member.

The course of proceeding in either of these cases is just the same as that which I mentioned to you as fit to be adopted in cases of

complete transverse division of the artery in an open wound. You must find out the wound in the artery, and secure it by a ligature; and unless you do this, the patient continues in danger of his life, and the surgeon must be kept in a state of the greatest anxiety and alarm. It is important that you should do this as early as possible; for if hæmorrhage takes place from the wound, and if it still remains open, the repetition of this hæmorrhage in cases of important arteries, such as the femoral, though it may be of short duration, is attended with imminent risk to the life of the patient; and I have just mentioned to you a case where a patient bled to death even from the inferior orifice of the brachial artery. If it is a case of diffused false aneurism, the longer you delay the operation the more difficult it becomes; for as the swelling becomes more considerable, the relative position of the parts is more difficult to ascertain;—you have a greater depth of parts to divide before you arrive at the wounded vessel, and you perform the operation altogether under increased difficulties of every kind. There is another source of difficulty in these cases: in order to protect the patient from sudden death, it is common to put a tourniquet upon the upper part of the wounded limb: now the application of this instrument is attended with excessive pain, and a general swelling of the limb below the part where it is placed. Thus all the circumstances that take place increase the difficulty of the operation; and, in fact, these difficulties become more and more considerable the longer the operation is delayed. The wisest plan would be, to cut down upon and take up the vessel immediately after the accident has taken place, if it be practicable, for then the parts are free from effusion and swelling, so that you have all the natural guides to direct you in seeking for the artery.

The operation of cutting down upon and securing the artery, in some of these cases is a very serious, and indeed a very difficult one; so that it is necessary for you to be quite clear respecting the nature of the case before you commence an undertaking of this kind. Perhaps you have not seen the patient immediately at the time that the wound has been received—you do not know the circumstances that have occurred, and you must be satisfied to trust in a great measure to the report of others, in order to guide your judgment upon various important points. In the first place, you would have reason to suppose that an important artery has been wounded if profuse hæmorrhage took place immediately after the accident, and particularly if you can ascertain that it has been arterial;—in the next place, if there be a recurrence of free hæmorrhage some time after—if both these circumstances have taken place in the case, there can be no

doubt that an artery, and that, too, of considerable magnitude, must have been wounded. You generally derive some information respecting the probable nature of the wound by observing the state of arterial pulsation in the vessels of the limb beyond the situation of the injury. If the main artery should have been seriously wounded, you will probably find that the pulsation is either suspended, or at all events materially altered, in the vessels that are situated beyond the injured part.

Then, having ascertained these points—having established your diagnosis so far as circumstances enable you to do this, and having come to the conclusion that an artery is wounded, and that it is necessary to take it up—you proceed to perform the operation, first placing a tourniquet on the main arterial trunk, above the situation of the wound, or having it compressed by an assistant. You observe, of course, the situation of the external wound, and ascertain, if you possibly can, the direction which the instrument that inflicted the injury has taken. Thus you may be led to infer with some accuracy the situation in which the artery has been incised. You must then make a free incision over that situation, and you will find much advantage in making a large opening in such a case; for you generally want much room where the arteries that are wounded lie deep, and unless you make an incision of considerable magnitude, you have to enlarge it afterwards, or are embarrassed in finding out the artery, in consequence of the opening being too small. When you have made the incision—supposing it to be a case of diffused false aneurism—you find, when you cut into the tumor, that you come to a quantity of recently coagulated blood; and when you have taken that out, and cleansed the wound by means of a sponge, you very commonly find that the wounded artery is dissected already for you, by the injection of blood into the cellular texture: you see the artery lying before you, and are able to discern the opening—that is, as soon as you loosen the tourniquet, or relax the compression on the arterial trunk: you have then no difficulty in being able to tie the vessel in the situation of the wound.

About a year and a half ago a patient was brought to this hospital who had received a wound of the femoral artery in the lower part of the limb: I think it was inflicted by a knife, which opened the artery, where it passes through the tendon of the triceps. The patient lost a large quantity of blood, and considerable hæmorrhage took place three or four hours after the receipt of the injury. It was found necessary to make an opening in the situation of the wound, and take up the artery. The place where the vessel was wounded here was deep, and there was a great deal of difficulty

in finding it; however the wound was dilated, and the vessel laid bare, when an opening was found in the artery about three-quarters of an inch in length—it seemed to have been slit longitudinally. A ligature was placed on the artery above the wound, and when it was so placed, and the tourniquet was loosened, the artery bled very freely from the lower orifice. Of course from that circumstance—though even otherwise it would have been deemed necessary—but that circumstance clearly shewed the necessity of tying the lower orifice of the artery, which was secured accordingly, and the patient did very well.

I also remember the case of a boy brought to the hospital a great many years ago, who had had a knife fall obliquely on the upper part of his thigh. A large quantity of blood flowed from the wound at the time of the accident, but he fainted, when the hæmorrhage stopped, and the wound was brought together. In that case a swelling formed on the anterior and upper part of the limb; it was a case, in fact, of diffused false aneurism. The wound here was seated so high up that the tourniquet could not be applied, and it was necessary to compress the artery where it passed over the bone. In laying bare the artery, I cut through the skin, and took out the coagulum: now in this case, as I have already mentioned, the artery was found very free, insulated by the injection of blood, so that it was easily taken up, and two ligatures were applied. Such is the course you are to pursue in cases of this kind.

In some of these injuries, the exact situation of the wound, the vessel itself, in fact, that is wounded, is uncertain. The vessel may, perhaps, be wounded in a part of the limb where it is very deeply seated, and the surgeon experiences considerable difficulty in exposing and securing it. Hence he is led to inquire whether the end might not be equally answered by taking up the main artery of the limb at a higher point, in some situation where it is more easily accessible. Supposing the vessel is wounded in the ham, for instance, it might be supposed that the femoral artery might be easily tied in the situation where it is ordinarily operated on, for popliteal aneurism. Now when the artery is tied above the situation of the wound, the hæmorrhage from the wound below is stopped for the time, and in some instances it is stopped permanently; but in the majority of cases, although it is stopped for a time, it recurs after a longer or shorter interval. Thus, at last, the necessity arises for securing the vessel in the situation where it has actually been wounded.

I remember an instance which occurred in this hospital a great many years ago, illustrating this point. A woman received a wound from a piece of glass, about the middle of the fore arm. A pointed piece of



glass struck her on the fore arm, penetrated to an uncertain depth, and produced a wound, from which free bleeding took place at the time of the accident. The wound was brought together, however, and a compress applied, and the parts seemed to heal over. There was a kind of scab formed, and this scab had given way twice, and profuse bleeding had taken place, which, as far as could be ascertained, was of an arterial character on each of these occasions. This woman came to the hospital at the end of three weeks from the accident, and the above was the account she gave of herself. Profuse bleeding had taken place at the time of the accident, and two recurrences of such bleeding, on the scab of the wound giving way. When she came to the hospital, there was a considerable swelling upon the anterior part of the fore arm, which pulsated in the situation where the wound took place. After she had been a short time in the hospital, the wound gave way again, and another free arterial hæmorrhage took place from it. On considering the circumstances of this case, it seemed very doubtful what vessel was divided, whether it was the radial or the interosseal. It was quite uncertain how far the glass had penetrated, and it was, therefore, judged proper to try the effect of tying the brachial artery. This was done with two ligatures, and was followed by a cessation of the hæmorrhage at the time, but soon after the pulse could be felt at the wrist, and a slight pulsation occurred in the situation of the tumor. The patient was kept quite quiet, evaporating cloths were laid on the arm, and all the means adopted which were calculated to lessen the force of the circulation: however, on the eighth day after the ligature was placed on the brachial artery, the original wound again gave way, and free arterial hæmorrhage took place from it. This shewed the necessity of cutting down in the situation of the wound, and securing the bleeding vessel. The tourniquet was applied, an incision was made, and then the radial artery was seen with an opening involving about half its circumference. The tourniquet was slackened, and the blood flowed freely from both extremities,—from that portion nearest to the heart, and from that most remote. A ligature was applied above and below the wound, the artery was cut across between them, and the case terminated favourable.

A soldier received a wound in the calf of the leg, at the battle of Albuera. The ball went in at the posterior part of the calf, and came out in front, on the other side of the tibia, having passed between the bones. Very free bleeding took place at the time of the accident. This occurred on the 16th of May, and on the 15th of June hæmorrhage to a very considerable extent, and of arterial character, took place from the wound; and

as the precise situation of the wound in the artery was quite doubtful, and as the bullet passed through the thick part of the calf of the leg, the surgeon took up the femoral artery just above where it passes through the tendon of the triceps. This arrested the hæmorrhage at the time, but, about three or four days after, bleeding again came on from the wound, and it was deemed necessary to amputate the limb. It was found on examination that the anterior tibial artery was the one injured by the bullet.

These facts shew you that you cannot trust, in the wounds of arteries, to ligatures of the arterial trunk above the injury: the freedom of the collateral circulation is so great in all parts of the body, that you find hæmorrhage will take place from the wound of an artery, although you may have tied the main trunk higher up. Hence it is very necessary, in all such cases, if possible, to cut down and secure the wounded artery in the situation where the injury has been received.

#### *Aneurism.*

I next proceed to speak to you of *aneurisms*.

An aneurism is a tumor usually attended with pulsation, formed by a general or partial dilatation of an artery, or in consequence of a wound, rupture, or ulceration of some part of the coats of an artery. The tumor which accompanies an aneurism is hollow, and filled, during life, with blood either in a fluid or coagulated state. The tumor is continuous with the artery on which it is formed; indeed the sides of the tumor itself consist either entirely, or at all events in part, of an expansion or continuation of the proper tunics of the artery. The hollow tumor, then, thus formed and thus filled with blood, constitutes what we call the sac of the aneurism; in fact, it is the aneurism itself. But we speak frequently of an *aneurismal tumor*, or an *aneurismal sac*—the sac meaning that portion of the swelling which is formed either of the dilated or ruptured portion of the tunics of an artery. Then there is a free communication between the tube of the affected artery and the aneurismal sac; and that communication either consists of a single opening, which may be circular or oval, or slit-like, or it may consist of two openings—that is, the artery proceeding from the heart opens into the aneurismal bag at one point, and at some distance there is an opening leading to the continuation of the trunk further on in the limb.

[Mr. Lawrence here presented two specimens, remarking]—Here is an aneurism seated on an artery where you observe there is a single aperture: this is the arterial tube cut open; this is the aneurismal sac; and you see a single opening, measuring

about one inch in diameter—it is of an oval shape. Here is another aneurism, where there are two openings; this is an aneurism of the subclavian and axillary arteries. You observe there is a considerable interval between the two openings.]

The general doctrine respecting aneurisms has been, that there are two kinds of the disease; one consisting of an uniform dilatation of the coats of an artery, and the other of a partial enlargement of these coats, or rather a rupture or giving way of the coats, so that the aneurismal sac is formed only in part by the tunics, the rest being composed of the cellular sheath of the artery or other surrounding parts. These two kinds of aneurism are distinguished by the terms *true*—and *false*, or *spurious*; true aneurism having been considered to be that which is composed of the uniform and general dilatation of the coats of an artery; false or spurious aneurism, that which is produced by the partial giving way of the coats.

The propriety of this ancient division of aneurism has been called in question by Scarpa, who has endeavoured to shew that there is in fact no such thing as true aneurism, but that all aneurisms are false—that is, that they consist in a partial ulceration or giving way of the coats of an artery, in consequence of which the blood comes into contact with the cellular sheath of the vessel, distends it, till, by its enlargement and ultimate giving way, the blood comes in contact with the various surrounding parts, which then compose the aneurismal sac. The accurate investigation into the nature of the formation of aneurisms which has followed, in consequence of the promulgation of this opinion of Scarpa, has tended to shew that the ancient opinion is the correct one—namely, that there is a general dilatation of the arterial tube, or true aneurism; and also that certainly a great proportion of cases consist of what, according to the ancient division, would be called false or spurious aneurism—that is, aneurism formed by ulceration and the partial giving way of some part of the arterial tunics. A true aneurism is, in fact, a dilated artery; and such aneurisms are chiefly seen in large vessels, like the aorta. They may take place to a considerable extent there, as this preparation [exhibiting it] evinces. This is a large aneurismal sac, measuring some inches in diameter, and it is composed of a general dilatation of the artery; so that, if you examine any part of the sac, you find it consists of three proper tunics—the external or fibrous, the middle and the internal. In those cases where the arteries are thus dilated, we find that the arterial tunics are considerably diseased—that is, they become thickened, and on the internal coats are cartilaginous and osseous

depositions; so that it is not merely a dilatation, but a dilatation of the vessel accompanied with important diseased alteration of structure.

[Mr. Lawrence here presented various preparations in illustration.]

The great majority of aneurisms, however, and particularly those that we have to operate on—that is, those seated in arteries of the second magnitude, as in the primary branches of the aorta—are aneurisms of the false or spurious kind, according to the ancient division. Scarpa states that they are formed by a partial ulceration of the internal and middle tunics of arteries; that these become destroyed at a certain point; that the blood passes through the opening thus made, and distends the external or cellular coat of the artery into the aneurismal swelling. [Mr. Lawrence here showed a specimen.] This seems to exhibit the process. There is here a small swelling formed upon the abdominal aorta. There is a little round opening, shewing where the coats had given way, and through which the blood had passed, distending the external coat of the vessel. This specimen seems to correspond pretty nearly with the description Scarpa has given of aneurism in the early stage. It is very uncommon to meet with an example illustrating this early period of the formation of aneurism, and I must observe that this is a part of the doctrine of Scarpa which is defective in evidence. We have abundant examples illustrating the progress of these aneurisms when they have attained some size, but Scarpa does not give any cases, or representations by figures, of the incipient stage of such affections—that is, in which the internal and middle coats are ulcerated, and the blood is making its way to the external coat, so as to form aneurism. That part of his description cannot be considered as made out satisfactorily. We know, on the contrary, that the aneurism of which I am speaking may form by a partial dilatation, including all the three coats of the vessel. We meet, not uncommonly, with such partial dilatation of the arterial tube; and in the small aneurism thus constituted we can trace all the three component parts of an artery, but we can see no such actual ulceration or giving way of the middle and internal tunics; on the contrary, we observe at the commencement of the affection an uniform dilatation of the three arterial tunics. When this dilatation has gone to a certain point, the internal and middle coats of the artery do not seem to admit of farther extension. They then give way by ulceration, and thus the cellular sheath of the artery becomes exposed, so that the blood comes in contact with it, and thus it forms a part of the aneurismal swelling. This distends and gives way to a certain extent; and then, in proportion as the aneu-

rism increases, the neighbouring blood-vessels or tendons, or nerves, or muscles, become involved in the progress of the tumor, and form part of it. Thus, in the case of spurious aneurism, the tumor may rather be said to be a swelling formed upon an artery than to be a swelling of an artery. We find the artery, in three-fourths of the circumference, quite entire, but in the remaining part there is a portion which has given way, and the opening communicates with the sac of the tumor.

The specimen which I have just exhibited illustrates the mode of formation of an aneurismal swelling of this kind. If you look minutely at it, you see a giving way or opening of the vessel, and that the tumor is formed round that aperture like a kind of lump or knot. It is by no means a general dilatation of the artery; you see that it is a swelling formed on one side of the vessel.

[Mr. Lawrence then presented a drawing from the preparation he had just exhibited. The circumstance, he said, was perhaps rendered a little more clear in the delineation than it could be in the preparation. In the plate was seen a small opening, and the swelling was obviously a tumor formed upon the artery at one spot, the main tube of the artery not being interrupted by it; such being the nature and appearance of false aneurism formed upon a large arterial trunk. A second plate represented a small tumor of the descending aorta, somewhat analogous to the preparation he had shewn; it formed a swelling seated on the anterior part of the vessel—an appearance, Mr. Lawrence remarked, very different from the general enlargement of the tube, observed in true aneurism. A third plate represented a view of an incipient dilatation—the early stage of true aneurism.]

Now you observe, from this view of the sac, that an aneurism is differently formed in the different species of the complaint. In the true aneurism, the sac of the aneurism is, in fact, composed of the regular arterial tunics, just the same as make up the tube in its healthy state. But in spurious aneurism you find you can only trace the arterial tunics from the healthy tube through the opening into the beginning of the sac; you find for the space of an inch, or an inch and a half from the healthy artery, there is a smooth, internal lining on the inside of the sac, but then you come to a point where the internal coat appears with a ragged edge, and from that point the sac of the aneurism is formed by the consolidation of the cellular membrane of the parts in which it is developed; the muscles, or tendons, or nerves, being implicated, and forming a part of the sac. Indeed, the cellular membrane that becomes successively involved in the aneurismal swelling undergoes the same kind of change which the cellular membrane does

in the neighbourhood of phlegmonous inflammation of any kind. Adhesive inflammation takes place, by which it is consolidated and rendered firm, so that it is converted into a dense texture, which confines the blood, and forms a kind of regular membrane, and this same consolidation extends to the muscles and nerves, and other parts that are accidentally included in the progress of the aneurismal tumor.

There are hardly any limits to the swelling in a case of spurious aneurism, because if there is an abundance of cellular substance and of the surrounding parts for the aneurism to extend itself in, it goes on increasing in size. When an aneurism comes in contact with bone, it produces absorption of that bone. Thus in the case of an aneurism seated in the aorta, when it approaches towards the parietes of the chest, it makes its way through the sternum, through the ribs, and even through the vertebræ.

[Mr. Lawrence here presented a preparation, and said,—This is the case of aneurism of the aorta, such as I am speaking of; it has proceeded to the sternum, and come through it. The cyst is composed, not of the arterial tunics, but is made up in the way that I have described to you, of a consolidation of the cellular substance of the parts into which the aneurismal tumor has extended.]

In the same way you may have an aneurism of the descending aorta penetrating through the ribs behind to the back, so that there is hardly any limit in such circumstances to the possible increase in the size of the aneurism. The dimensions to which these spurious aneurisms may attain, and the length of time that will occur before they give way, depends therefore upon the nature of the parts in which they are formed, and upon the quantity of cellular substance that is seated between the artery and the external surface, as well as on the greater or less resistance that is presented to its increase.

An aneurism will sometimes take place in the aorta, in that part of the vessel which is covered by the pericardium. There is merely the pericardium, externally, and the cellular substance which connects the pericardium to the tube. Aneurisms here generally burst when they have attained the size of a hazel-nut, or at the largest, a walnut; but when they are seated in the lower part of the descending aorta, you may have an aneurismal tumor formed capable of containing two, three, or more pints of blood.

Inasmuch as the blood which is seated in an aneurismal tumor is out of the direct course of circulation—inasmuch as it is not constantly impelled through the vessels in the way that blood naturally is, it has a tendency to coagulate in the aneurismal sac. We find, in fact, that when the aneurism has attained even a moderate size, the



fibrin of the blood is separated, and forms a thin stratum, lining its internal surface. The fibrin is separated, that is, the stratum that lines the aneurismal sac is of a greyish or light brown colour, consisting of part of the blood without the red particles. The fibrin is deposited in successive strata one after another, and thus the cavity of the aneurism becomes lined by numerous successive layers of coagulum, adhering in the first instance to the sac, and then successively to each other. This is called a *laminated coagulum*, because when you open the aneurismal tumor after death, you find besides this that the rest of the cavity of the aneurism contains a large quantity of recently-clotted blood—that is, the blood which may have happened to be in the aneurismal tumor at the time of death coagulates, and appears like a recent clot. But that is quite a distinct matter from the tough, light yellow, or brown stratum of fibrin which lines the sac of the aneurism, and closely adheres to its surface.—[Mr. Lawrence illustrated these facts by various preparations, in one of which the coagulum when it was cut through resembled layers of paper.]

The recently coagulated blood comes away easily—we wash it out of the sac; but these lamina remain firmly adherent to the sac, and we cannot separate them unless we use considerable force. I am surprised to find that sometimes these laminated coagulæ are spoken of as if they were an actual deposition of lymph: there is, in my opinion, not the slightest ground for such representation. It seems to me perfectly clear, that these are separations of the fibrin taking place from the blood that circulates through the arterial tube gaining admission to the sac of the aneurism through the aperture in the sides of the vessel;—they are not organized, although they are tolerably firm, and adhere to the side of the aneurismal sac. There is no pretence whatever for saying that they are organized; they receive no vessels, and they do not seem at all to admit of organization.

Now the natural progress of an aneurismal tumor is to become larger and larger; at the same time it gradually advances towards the surface of the body. Like a collection of matter, or like a tumor of any kind in the cellular substance, it elevates the skin and forms an external tumor, and the side of the cavity becomes thinner and thinner, till it bursts. Although coagulum may be deposited in other situations, we do not find that it is formed at that part where the aneurismal tumor is advancing to the surface. When the integument has become very thin, the aneurism ultimately gives way; and this occurs in a different manner under different circumstances. Very commonly the integument is rendered so very thin that it is deprived of vitality, and a slough forms at the most prominent part of

the skin; and when the slough separates, the blood in the aneurismal sac escapes, and free hæmorrhage takes place. The patient either dies now, or the hæmorrhage stops for a short time, but is soon repeated, and ultimately proves fatal. Sometimes the integument, instead of sloughing, ulcerates; sometimes, particularly in cases of internal aneurism, it gives way by actual rupture, or bursting. I have alluded to the cases of small aneurisms forming on the aorta, within the covering of the pericardium: these, when I have seen them, have given way by rupture; there has been an actual rent or breach in them, found on examination after death, just as if you had lacerated the part by force; and in some other instances of internal aneurism I have seen the same thing.

Now sometimes there is a bursting of the sac into the cellular substance, by which an aneurism that in the first instance has been circumscribed becomes diffused. The aneurismal tumor increases in the way that I have described for a certain time, slowly augmenting in size; but the patient is aware suddenly—perhaps in consequence of some effort—of a rupture, as of something giving way; at the same time there is an immense increase in the size of the tumor. I have seen this in an aneurism seated at the bend of the thigh in the groin, and in the axilla. I have seen it also occurring in the ham; and when such an aneurism has been examined, that portion of the aneurismal tumor immediately in contact with the artery has been composed of a continuation of the arterial tunics, and the rest has consisted of the condensed cellular membrane, and other surrounding parts. Under other circumstances it has generally been made up of vessels, nerves, and other parts not much altered. The sac has burst, and thus the surrounding parts receive the blood from it: a kind of internal bursting of aneurism, by which, in some instances, a great increase takes place in the size of the external tumor.

#### LECTURE XLIII.

*History of Aneurism—(continued).—Spontaneous Cure—Operation.*

[MR. LAWRENCE, at the commencement of this lecture, presented a specimen of an aneurism of the aorta seated just above the semilunar valves; and remarked, that when aneurisms occur in this part of the aorta, they cannot increase much, as there is but little cellular membrane, and merely the serous membrane covering them; so that they burst at an early period. The specimen was such an aneurism, about the size of a small orange, which had burst into the pericardium.]

The lecturer then resumed:—I described

to you, gentlemen, in the last lecture, the origin and increase of aneurisms, and their progress towards a fatal termination by bursting. Now aneurisms do not always end thus unfavourably; they admit of cure by natural processes and by artificial means. The deposition of the fibrin of the blood, which I have already had occasion to advert to, proceeds sometimes until the cavity of the aneurism is filled up, so that the tumor is converted into a solid swelling, and the passage of the blood into it is completely obstructed. Thus the impetus of the blood, entering the aneurism from the artery, is entirely prevented, and the process by which the increase of the aneurismal tumor should be continued, is put a stop to. Under such circumstances the sac contracts, the fibrin that has been deposited in it becomes absorbed, and this process goes on until the coagulum by which the sac has been obstructed is entirely removed; the tumor becomes solidified, and the artery itself is reduced to an impervious fibrous cord. In this way the aneurism terminates, by the natural obliteration of that part of the artery which has been the seat of disease. You have already seen that the tumor that constitutes the aneurism is seated upon the trunk of the artery. Now if the situation of the parts behind the arterial trunk be such as to limit and prevent the natural extension of the tumor externally, the tumor must be increased either in a direction downwards or upwards, so that a considerable portion of the tumor will lie actually upon the arterial trunk, either upon that portion of the trunk which is immediately above the origin of the aneurism or that which is below it. Under such circumstances, if the external parts continue to press upon the tumor, so as to prevent its extension externally, the tumor compresses forcibly the trunk of the artery. Thus the pressure of the aneurism itself may bring together and keep in contact the sides of the artery either above or below the original seat of disease, and thus lead to the obliteration of the vessel.

I remember examining a patient in this hospital who had died of an aneurism, or rather in consequence of an aneurism, seated in the external iliac and femoral arteries. In that instance, the pressure of the tumor had produced a consolidation of the lower orifice of the artery, and for two or three inches of the arterial tube immediately contiguous to it. It must be obvious to you, that if the tumor had pressed upon the superior instead of the inferior orifice of the artery, the occurrence of the same consolidation would have been a natural cure for the aneurism.

There is a third way in which aneurisms are spontaneously cured—that is, by the occurrence of inflammation and sloughing in

the aneurismal sac. I have already mentioned to you that the most prominent point of the aneurismal tumor will slough when the integument has become very thin, and in that way the aneurism breaks externally. But I am not now speaking of a slight partial sloughing, such as that, but of a general inflammation of the whole aneurismal sac, ending in the sloughing of a considerable portion of it. Such an inflammation is attended with a high degree of local disturbance, great redness, violent pain and heat, with a corresponding febrile disturbance of the system. Matter will form in the sac and the integuments round it, and the external covering of the sac will slough; and while this process is going on, the blood coagulates in the aneurism, and generally also in that part of the arterial trunk which communicates with the sac. You might at first expect that sloughing of the aneurismal sac would lead to fatal hæmorrhage, when it gives way; but you will remember that in this case the same circumstance occurs as in the sloughing of a considerable portion of the extremity of the body; in fact, before the part actually perishes, there is a coagulum of blood formed in the vessels, extending considerably higher than the actual seat of the mortification. The same occurrence in the aneurismal sac has the salutary effect, not only of preventing hæmorrhage when the slough gives way, but, if the strength of the patient should be sufficient to support him through the general disturbance that attends the process, it will lead to his final restoration.

There are three ways, then, in which aneurism may be cured spontaneously, by the changes that take place independently of any interference of medical or surgical treatment. The increase of the deposition of fibrin in the aneurismal sac, leading to its gradual filling up and obstruction—the obliteration by pressure of the extremity of the artery communicating with it;—the inflammation and sloughing of the aneurismal sac, and the coagulation of blood in the extremities of the arterial trunk, leading to its final obliteration.

When aneurisms are cured by any of these natural processes, the arterial trunk in which the disease has been situated is found, on examination after death, to be obliterated: that is, the trunk is filled up, it is converted into a solid fibrous cord, the artery is no longer pervious, and this process of obliteration extends upwards and downwards in the trunk as high as the nearest collateral branches, sometimes occupying the space of two or more inches.

I remember the case of a patient in this hospital, a great many years ago, who had a large aneurism of the axillary artery. He said he had had a similar tumor, though perhaps rather smaller, in the axilla of the op-

posite side, and described so accurately the nature of the tumor as to leave no doubt of the truth of what he said. He died in consequence of the aneurismal tumor which I have mentioned, and which gave me an opportunity of examining, after death, the artery of the opposite side, in which the patient said there had been a pulsating tumor, which had gradually grown to the ribs, and been finally cured. I found the artery reduced to a solid impervious cord, which probably was the situation of the aneurismal tumor. There was a tumor about the size of my thumb—it was an aneurism that had undergone the natural cure, and was about an inch and a half in length.

There was a man in this hospital some time ago, who had aneurism of the femoral artery, that underwent a spontaneous cure. The patient is well, and is now going about. I will mention the case in connexion with another point in the history of aneurism. I have mentioned, that when an aneurism is cured by the natural process, the arterial tube on which the tumor is situated is obliterated; but perhaps I am not authorized in making the observation quite absolute. It is probable, in the case of an aneurismal tumor situated upon the aorta, where the arterial tube is very large, and where the perforation of the coats may be very small, so that the aneurismal tumor may be small in proportion to the size of the tube, that the aneurism may become obstructed and admit of spontaneous cure, without the tube of the artery being interrupted.

[Mr. Lawrence here exhibited a specimen of aneurism of the aorta, in illustration of this. The aneurism had been cut in two; it was a small tumor, about the size of a large walnut, and had become filled by a laminated coagulum. The aneurismal sac was firmly attached to the artery, and the coagulum had a firm smooth appearance. Mr. Lawrence also presented another preparation, where he said the same process seemed to have been going on; though here a considerable part of the cavity of the aneurism remained;—but a large quantity of laminated coagulum had been deposited, so that it was in the early stage—the process of obliteration not having gone quite so far.]

The symptoms of aneurism are different, according as the affection is seated in an external or an internal artery. By *internal* aneurisms I mean those of the aorta and of the *arteria innominata*, which are developed either in the cavity of the chest or the abdomen, and which may proceed to a large size without shewing themselves at all externally. By *external* aneurisms I mean those that are formed on the principal arterial trunks of the upper or lower extremities, and of the neck. An external aneurism consists of a firm pulsating tumor, situated in the course of one of the arteries that I have

just mentioned, and is inseparable from such arterial trunk. I say that an aneurism is a *firm* pulsating tumor. In the early stage of the disease the tumor admits in some degree of diminution by compression; it is filled up with fluid blood, that has not begun to coagulate, and therefore you find that it yields to the pressure of the fingers, so that you can thus diminish the size of the tumor. Pressure on the trunk of the artery, between the aneurismal tumor and the heart, puts a stop to the pulsation, and renders the tumor in the early state somewhat softer and flaccid: pressure on the trunk of the artery, below the aneurism, renders the tumor rather more tense; but in proportion as the aneurism becomes larger, and as the laminated coagulum is deposited on its sides, the tumor loses altogether that soft compressible character, and becomes firm and unyielding. The disease of the arterial trunk interrupts or interferes with the regular current of the blood through the artery, and the consequent regular arrival of the blood in the various vessels seated beyond it. Thus you very commonly find that the pulse is either suspended or considerably weakened in those vessels which are seated beyond the aneurismal tumor. In case of an aneurism of the femoral or of the popliteal arteries, you will probably not feel the pulsation of the posterior or anterior tibial arteries, while the pulsation of those of the opposite side can be felt very plainly. The aneurism being on a large arterial trunk, which is usually accompanied by some of the nerves, the development of the tumor often interferes with these nerves, and produces considerable pain, either in the seat of the swelling, or frequently shooting along the limb in all directions; and this pain in some instances is extremely severe. The pressure of the tumor upon the trunk of the absorbent vessels, and upon the veins, occasions general swelling of the limb below the part, of an œdematous character. These circumstances lead, therefore, to a considerable impediment in the functions of the affected part, and the patient cannot perform the ordinary motions of the limb, or at least not perform them without great pain. Such are the leading circumstances which characterize an aneurismal swelling, when seated in one of the external arteries of the body.

Now the existence of pulsation does not of itself essentially characterize an aneurism; so that you cannot conclude from that circumstance alone that it is an aneurism. A solid tumor situated over a large artery will receive a pulsation from it. You know that if you place one knee over the other as you sit, the impulse of the blood through the popliteal artery will make the limb which is uppermost shake—you cannot possibly keep it still. You may suppose, therefore, that if a swelling were seated upon the popliteal



artery, the impetus of the blood through the arterial trunk would communicate the pulsation to it. In the same way in a swelling of the neck, you may have a pulsation communicated to it by the carotid artery. I have seen a swelling which has pulsed, and which was attended with an interruption of the pulsation in the arteries beyond the tumor, which, nevertheless, was not an aneurism. I had occasion, in a former lecture, to mention a case of fungus hæmatodes, where the tumor was developed in the head of the tibia. Now this tumor happened to be developed where the popliteal artery divides into the anterior and posterior tibial, and situated between the trunk of the vessel and the strong fascia of the leg which binds down the muscles at the upper part of the tibia and fibula. The tumor being thus situated, pressed on the trunk of the popliteal artery at its division, and the effect of the pressure was such as to prevent all feeling of pulsation in the anterior and posterior tibial arteries in the limb of that side; at the same time the tumor received from the artery as distinct a pulsation as is ordinarily found in aneurism. These circumstances in that case led to the opinion that it was an aneurism; however, after a little time had elapsed, the tumor made its way through the fascia of the leg, so as to extend externally. The consequence was, that the trunks of the posterior and anterior tibial arteries were relieved from pressure, and the pulse returned in them; at the same time the tumor, not pressing so strongly upon the artery, it lost the pulsation that had previously characterized it. When a tumor pulsates in consequence of being seated upon an arterial trunk, the pulsation consists in a rising and sinking of the general mass of the tumor—the whole tumor rises and sinks with the pulsation; but in aneurism, if you grasp the swelling, you feel that the tumor is distended: you have a sensation communicated to the hand as if fluid were injected into the swelling; the swelling seems to increase in circumference at each pulsation of the heart. The feeling is, therefore, very different from that communicated by a solid tumor placed over the arterial trunk. Again, another circumstance is to be taken into the account in the diagnosis of aneurisms and other tumors, namely, that even aneurismal tumors do not in all cases pulsate. Various changes may take place in the state of the aneurismal sac, which will be attended with a diminution or cessation of the pulsation; or the pulsation may be suspended for a time and return again.

Some years ago a gentleman came to town from the country, and placed himself under my care, in consequence of a swelling, supposed to be aneurism, in the middle of his thigh. He was sent to town by an intelli-

gent practitioner in the country; and when I came to put my hand upon the tumor, I was surprised to find that it did not pulsate at all. The limb was swelled, and the general circumstances in other respects corresponded accurately with the notion of an aneurism. I interrogated the patient closely as to the character of the tumor in its previous state, and he described to me so clearly that it had pulsed up to a certain time, and mentioned when the pulsation began to diminish, that I could not doubt that it was an aneurism; and inasmuch as the pain, the swelling of the limb, and all the general effects produced by an aneurismal tumor were undiminished, and, in fact, were rather increasing, I did not hesitate to apply a ligature on the femoral artery, in the usual situation, which was attended by a regular diminution of the size of the tumor; and there could be no doubt that it was a case of aneurism.

I had two patients under my care in the hospital with aneurism situated at the bend of the thigh, in which, at all events, during a considerable period of the existence of the tumor, no pulsation was sensible. The first was a young man, admitted under the care of my colleague (Dr. Latham), for what was considered rheumatic pain, affecting the lower extremity of one side. He had been some time under the care of Dr. Latham, when it was discovered that there was a considerable and firm swelling in the bend of the thigh. I saw him in consequence of this, and found a large hard swelling, without any pulsation, seated on the bend of the thigh, which I thought could only be regarded as a considerable swelling of the glands of the part. There was some degree of swelling, and considerable pain, in the lower extremity generally, and in consequence of this, the case was transferred to my care. The case was again examined very carefully, but no suspicion was entertained of its being an aneurismal tumor; and means were adopted on the suspicion of its being a chronic enlargement of the absorbent glands of the groin. I recollect receiving the case, when there were different medical persons present, among whom were some foreigners, who happened to be here at the time, and who examined the case with me; but none of them entertained any suspicion of the disease being aneurism. After the patient had been some time under my care, an attack of pain came on in the swelling, which led me to examine it again very carefully. I was examining it in various directions, to see if there was any evidence of matter being likely to form, or if it had any fluctuation: in examining this point, I became sensible that pulsation existed in the tumor—and, in fact, at the time I am now speaking of, there was a decided pulsa-

tion in the swelling. This increased considerably in the course of a few days, and at length the swelling pulsated as strongly and manifestly as any aneurismal swelling that I ever saw. The truth was, an attack of inflammation had come on in the sac of the aneurism, under which the pulsation, which before had ceased, was renewed. It was deemed proper to tie the artery in that case, but in consequence of the inflammation having already gone to a considerable extent in the sac of the aneurism, the patient died, although the operation, so far as the securing of the artery went, was successful. This gave me an opportunity of examining the case after death: it was found in that case that the femoral artery was obliterated in the way I have mentioned to you, by the pressure of the tumor, so that the probability is, that the aneurism might have gone on to a natural cure but for the inflammation that had occurred in the sac.

The other case of swelling, in the same situation, is the one that I have already alluded to as an instance in which a spontaneous cure of the aneurism took place; and as that case, in certain respects, is interesting, I will read you a few minutes I have made of it.—This was a patient 30 years of age, whose recent occupation before he came to the hospital was that of a porter. About Christmas 1828, he observed a lump in the bend of the right thigh, which he could not ascribe to any strain, blow, or other injury. It gradually increased, without pain; but in a few weeks it caused a general swelling and stiffness of the limb, which had confined him to his bed for seven weeks previously to April, when he was received into the hospital. At this time the bend of the knee was occupied by a large swelling, without a definite boundary, extending three inches below the crural arch: it extended upwards to within two inches of the navel, and it was felt through the abdominal parietes as a large firm tumor, about the size of the fist. The swelling was œdematous, with the thigh half bent; and at this time he suffered much from pain and want of rest. There was no pulsation in the tumor, and there had been none in its progress; at least the patient had felt none, and the surgeon who first saw him prescribed simple treatment, and assured him he would soon get well. This made up the patient's account; but as I was quite uncertain as to the nature of the swelling, I examined every circumstance of the case with great care, and particularly investigated the tumor, both with the naked ear and the stethoscope. At the time the former case occurred, auscultation had not come into fashion, and therefore no attempt was made to examine the tumor in that way. But in the instance that I have now mentioned, it occurred to me that possibly pulsation might be distinguished by the ear, though

it could not be felt; and, in fact, when I put my ear down to the swelling, I heard the pulsation as distinctly as you hear the pulsation of the heart by placing your ear on the side of the chest; though even at that time no pulsation could be felt with the hand. With the stethoscope the pulsation was equally distinct, but not more so than with the ear. There could now be no doubt about the nature of the disease, as after a time partial pulsation could be felt, and even seen. It is a curious circumstance, that in a tumor where, up to a certain time, no pulsation existed, that such changes should occur as again to induce pulsation. In the instance that I am now mentioning to you, the pulsation of the aneurismal tumor became as strongly marked as that of any other aneurism I ever saw. At this time the swelling had increased so as nearly to reach the navel, the entire limb being enormously swollen. The operation was considered inadmissible: tying the aorta was suggested by an eminent surgeon who saw the case, but I considered that the chance of a natural cure, however slight, was preferable. The pulsation in the tumor gradually became feeble, and at last it seemed that the aneurism grew less, and the limb began to extend; the pain ceased, and the general health improved. The patient felt so well by the end of September, that he left the hospital at his own desire. \* \* \*

His recovery since he left the hospital has been progressive. The thigh is still swollen, but the tumor is less; and though the limb has become stiff, he can walk about with crutches; he is in good health, and looks well. The first part of these minutes I made in October 1828. The patient was at the hospital not long ago—in November 1829, when I made the concluding part of the memorandum. It thus appears probable that the aneurism was filled up by laminated coagula that the pulsation was thus suspended, and that subsequently the coagulum has been absorbed; so that what remains is some thickening and induration, the consequence of the deposition arising from the inflammation of the part, and the general tumefaction of the limb.

With respect to the symptoms of *internal* aneurisms, so long as they continue within those cavities of the body in which they are first developed, there are no circumstances which characterize their existence sufficiently decisive to enable you to know that aneurism exists. An aneurism seated about the arch of the aorta, may interfere with the important organs which are in that situation. The development of a tumor in that part cannot fail, by pressure on the various parts there, to produce serious effects, such as affections of the breathing, cough, pain, and so forth. A tumor in that situation very soon comes to press upon the trachea and œsophagus, and then may produce various symp-

toms; but until the tumor makes its way externally, so as to shew itself at some point of the external surface of the chest, and be recognized as a pulsating tumor, you cannot be certain that these depend on aneurism. The symptoms, in fact, frequently are of a nature not calculated to give the least clue to the existence of that disease.

I remember the case of a patient brought to this hospital, who had been subject for a short time only, according to her own account, to serious attacks of difficulty of breathing. She described these as so serious, that in three or four that had recently occurred, she had been so much affected that she thought she should have died in the fit: she could not fetch her breath, and in fact her description made one suppose, that there must be some very serious disorder seated about the pharynx or the trachea, interfering with the functions of those parts. We speculated on the probable nature of her disease, and considered what measures it would be proper to adopt in case, of a paroxysm coming on, and we were considering whether it would be advisable to make an opening in the trachea, and the opinion seemed to be rather in favour of that measure in case an attack of difficulty of breathing should take place. The woman had an attack of this kind in the night when no surgeon was at hand, and unfortunately she went off in this attack. This afforded me an opportunity of examining her after death, and I found an aneurism of the *arteria innominata* seated behind the sternum, about the size of half an orange, that pressed upon the trachea, and it slightly indented the anterior part of the tube, so as to make a slight inequality upon its surface; but I should not have supposed that it was sufficient to obstruct the tube so as to prevent the breathing, and in fact that it did not essentially do so was clear from its ceasing in the intervals of the attacks. But spasmodic attacks, at least such as for want of a better name we must call spasmodic, came on, attended with difficulty of breathing, and indeed that difficulty went the length of suffocation. You will recollect that there is but a small space about the upper part of the chest; the arch of the aorta, the *œsophagus*, and a variety of important vessels and nerves, are confined together in this space; and it is the situation in which aneurismal tumors of the arch of the aorta, or those of the *arteria innominata*, are developed. These tumors, therefore, cannot proceed to any great extent without interfering with the functions of the parts. Thus you find frequently that aneurisms in the arch of the aorta have terminated existence by bursting in the trachea or *œsophagus*. It has been known that tumors seated here have broke into the pulmonary artery, and such tumors have occasionally been developed without producing marked symptoms suffi-

cient to enable you to determine that the case was one of aneurism.

Aneurism is sometimes produced by obvious and direct external causes. A wound of an artery may produce an aneurism. I have already mentioned to you how the wound of an artery may be attended with effusion of blood into the surrounding cellular texture, and how blood escaping from an arterial tube in this way may be injected into the cellular texture of a limb extensively, or even generally, and I mentioned to you that such a case has been called *diffused false aneurism*; but, in fact, it should not be called aneurism at all; it is merely a case of a wounded artery, with ecchymosis or effusion of blood into the cellular texture, and has not any thing of the character that properly belongs to aneurism. However, the wound of an artery sometimes produces a circumscribed pulsating swelling. The arterial wound may be closed by coagulum, or in some other way, at the time of the accident, and this slight closure of the wound may give way, and be distended into a regular aneurismal swelling. It is in this manner that aneurism of the brachial artery takes place in consequence of a wound from venesection; and that aneurism of the temporal artery sometimes follows the wound of arteriotomy. I have seen it follow the bite of a leech;—one would suppose that it must have been a very strong leech to produce this effect. This is called a *circumscribed false aneurism*, and in all respects the nature of the affection and its treatment correspond to that which we shall have to state about aneurisms generally.

Then aneurisms sometimes appear to be produced by external violence of a different kind. The patient who has an aneurism says he has received a blow, or met with a strain, or that he has slipped, and, endeavouring to save himself, has felt something break, or crack, or give way; in these modes patients frequently account for the occurrence of aneurismal tumors.

Certain other external circumstances seem to have some influence in the production of aneurism, though we cannot point out exactly, perhaps, how they do so. It has been observed that popliteal aneurisms take place more frequently in those who keep their knees habitually bent, such as in postillions, taylor, and some others.

With respect to most external aneurisms, and even a greater proportion of the internal aneurisms, we must observe that the causes which lead to them are very obscure. Indeed, I do not know that we can assign any very satisfactory cause for their occurrence. We sometimes see instances in which aneurisms of the aorta arise and run their whole course, destroying the patient, without the surgeon being aware of their existence: I have known an instance in which a gentle-



man coming home after being out for a ride, and going to take off his boots, has fallen down dead from the bursting of an aneurism of the aorta, though he was not aware of labouring under any disease whatever. There are circumstances, however, whatever they may be, that act extensively on the arterial system; for we not uncommonly find aneurisms existing in more than one artery in the same individual. I have mentioned an instance of one case where aneurism took place successively in each axillary artery, and in nearly the last case I operated on in aneurism of the femoral artery, there was a small aneurismal tumor of the femoral artery of the opposite side. Several instances have been known in which patients have had external aneurisms and aneurism of the aorta simultaneously. They have died of the disease of the aorta, after having had external aneurisms operated on.

Aneurism occurs more frequently in the larger than in the smaller arteries of the body: it is most frequent in the aorta and innominate; next in the external iliac, femoral, brachial, and carotids; while in the arteries of the third and fourth order, such as the radial and the ulnar, the anterior and posterior tibial, and the interosseal, it is extremely rare—hardly ever seen there, except in consequence of a wound, or some external cause. It is much more frequent in arteries of the lower than in those of the upper extremities; indeed, it has been stated by some, that hardly an instance can be produced of any aneurism below the axilla which cannot be referred to a wound, or some obvious external cause. It is also found that aneurisms, as well as other diseased changes of the arterial coats, are much more frequent in the male than in the female subject. Mr. Hodgson, in his valuable work on Diseases of the Arteries and Veins, has given in a table a list of all the cases of aneurism that he had seen, which will shew you the comparative frequency of them. Mr. Hodgson's table includes 63 cases altogether; of these 21 were aneurisms of the arch of the aorta and arteria innominata, 16 occurring in males and 5 in females;—8 were cases of aneurism of the descending aorta, 7 males and 1 female;—2 cases of carotid aneurism, both in the male;—5 cases of aneurism of the subclavian, all in the male;—12 cases of inguinal aneurism, all in the male;—15 cases in the femoral and popliteal, of which there were 14 in the male and 1 in the female. So that in a total of 63 cases of aneurism, 56 were in the male and 7 in the female subject. This table also shews you the other circumstances that I have mentioned, the great frequency of aneurisms in the larger arteries; for out of 63 cases, 29 were of the arch of the aorta and the arteria innominata; and it exhibits the greater frequency of aneurisms in the lower than in

the upper extremities—there are 27 cases of aneurism of the lower, and 5 only of the upper extremity.

There are some rare instances of aneurism being found in some of the smaller arteries. I think there is a preparation in the museum of an aneurism of the splenic artery; there is here one of the renal artery; and in some instances aneurism occurs in the arteries of the head—as the basilar, and in the external branch of the carotid, and the branch that joins the carotid and the vertebral arteries: these, however, are rare occurrences; I believe there is no such thing known as aneurism of the pulmonary artery, at least I never read or knew of such an instance.

Then having seen the mode in which aneurisms are sometimes spontaneously cured, we naturally inquire whether we possess any means which are capable of placing the aneurismal tumor in such circumstances as would bring about this spontaneous cure, or as would favour its occurrence? The surgical operation of passing a ligature on the artery, between the aneurismal tumor and the heart, is an effectual mode of producing changes by which the aneurism may be got rid of; but in an aneurism of the aorta we cannot have recourse to this operation. It is true that the aorta has, I believe, in two instances at all events, been tied; but I believe the result of those operations were not such as are calculated to lead to a repetition of them. Aneurisms of the aorta, therefore, may be considered as out of the reach of the surgeon. Aneurisms, however, of the main trunks of the upper and lower extremities, and those of the neck when seated near the trunk of the body, may all be considered the subjects of surgical operation.

In some instances patients do not choose to submit to an operation; it has therefore been considered desirable to find out some course of proceeding, not involving an operation, that should be capable of bringing about this natural cure of aneurism. Direct depletion by loss of blood, abstinence, and rest, are the great means of reducing the force of the circulation generally, and thus they contribute towards the reduction of the force of circulation in the tumor, which circumstance we might suppose likely to lead to the deposition of a coagulum in the sac of the aneurism, so that it might become obstructed, and a natural cure thus be accomplished. This course of proceeding has been extensively tried, particularly in aneurisms of the aorta; and there is the further reason for the adoption of this course of proceeding, that aneurisms of the aorta are often attended with very considerable local suffering, considerable inflammation of important organs, which are more or less interfered with by the development of the tumor; considerable excitement of the system, with symptoms of a feverish character—symptoms which, whether the aneurism is to

be cured or not, are all likely to be benefitted by the plan of depletion. This plan has been tried extensively abroad; it was adopted by an Italian surgeon of the name of Valsalva; and Morgagni, who was an apprentice of Valsalva, has mentioned that he (Valsalva) had employed this method in many cases with very great success. He seems to have employed it very effectually—that is, he reduced his patients so much, that they could hardly lift their hands from the bed. The treatment he advises consists in venesection, purging, a very reduced diet, and absolute rest in the horizontal posture—that is, in a combination of all those circumstances which are calculated to reduce the force of the circulation, to diminish the impetus of the blood in the tumor, by which obstruction of the aneurism may be affected, and the circulation brought into that quiet, or rather languid state, in which you may suppose that the separation of the fibrin of the blood, and a deposition of laminated coagulum, would be promoted.

I have several times adopted this treatment in cases of aneurism of the aorta, and often with very considerable benefit; first, in relieving those symptoms of excitement that I have already alluded to, and secondly, in checking the progress of the aneurismal tumor, retarding its increase, and making it stationary. In the course of the last year a patient who was in the hospital for aneurism of the descending aorta, accompanied with a manifest protrusion externally of the aneurism in one part, was treated in this way, and the external protrusion gradually diminished, and ultimately entirely disappeared. I must observe, however, that I have not seen any case entirely cured by this treatment. It is a mode so repugnant to the inclinations and to the prejudices of the patient, that we find they will not readily submit to it. At first, till they have derived relief from the urgent symptoms, they are well enough disposed to yield obedience to your directions; but in order to have a chance of curing the aneurism, we must pursue the treatment for a considerable time. When, however, there is no longer any apprehension on account of the symptoms, and patients feel themselves very feeble, they begin to think that something is required to strengthen them; they wish you to let them have some meat and some beer, not to be bled again, and so forth. Now, whenever I hear hints of this kind, I know that it will not do to follow up the plan; for if you do, the patients will decamp. We generally find that patients and their friends, and even the nurses, are all in a conspiracy against us; they do not understand the principles of Valsalva. Thus I have not succeeded in these cases in following up even one to a satisfactory termination, though I have seen so much good done in a variety of

instances, as to lead me to suppose that if the plan were persevered in, it might be productive of a complete cure; at all events, I have seen that the progress of aneurism may be considerably checked by this plan of treatment.

With respect to bleeding in these cases, it is necessary to proceed with a little caution; for we find by experience, in serious affections of the heart and large vessels, syncope sometimes comes on, which will terminate fatally, and that not uncommonly persons under such affections will die suddenly: now we must not run the risk of bringing on that event by venesection. You should therefore be careful not to take a large quantity of blood in cases of this kind at once, but rather repeat the loss of blood occasionally. It may be a question whether any assistance can be derived where the tumor appears externally, by applying cold lotions, or even ice, to it—whether such applications have any tendency to promote coagulation in the tumor? But we find when cold applications are used, such as ice, the application is so painful to the patient that it cannot be well persisted in.

I should mention as an auxiliary, the employment of digitalis. This is a case in which, if we could produce the effect that digitalis sometimes has, viz. the reduction of the force of the pulse, the object which we have in view would be materially assisted. |

#### LECTURE XLIV.

*History and Treatment of Aneurism, continued—Pressure—Application of Ligatures—Secondary Hæmorrhage—Ligature beyond the Tumor—Varicose Aneurism.*

I SPOKE to you, gentlemen, in my last lecture, of the method of treating aneurisms, particularly those of the aorta, by venesection, abstinence, and rest; with other means calculated to lower the force of the circulation, which is called the method of Valsalva; and I stated to you that in no case had I witnessed any example of perfect cure effected by that mode of proceeding. I believe that others may have been more successful in this respect than I have been. At all events you find, in Mr. Hodgson's work on the Diseases of Arteries and Veins, several cases in which there seems reason to suppose that aneurisms of the aorta were completely and permanently cured by this plan of treatment. I have pleasure in directing your attention to this work of Mr. Hodgson's, as containing a very complete, and at the same time a very clear exposition of what we know relating to the important subject of diseases of the arteries and veins. You will find in it a very full and satisfactory account of the physiological and pathological principles applicable to this subject, with a very valuable col-

lection of facts illustrating them ; while the whole is arranged in a very clear and perspicuous manner.

The method of Valsalva is not strictly confined to aneurisms of the aorta. There may be external aneurisms in which there is a good deal of local excitement, and disturbance of the system connected with it, in which the patients will not submit to operation, where you may have recourse to that plan of treatment as the next best measure.

I mentioned to you also in my last lecture, that an aneurismal tumor sometimes does not present the most striking character of the disease—pulsation ; that is, that you cannot feel pulsation in the tumor. And I also mentioned to you that there are some instances in which pulsation cannot be felt, but in which it can be heard, either by the ear directly applied to the aneurismal tumor, or through the medium of the instrument called the stethoscope. The sound that is communicated in either of these cases is very peculiar ;—it is produced by the passage of the stream of blood from the tube of the artery into the aneurismal tumor. The blood passes through a comparatively contracted orifice to enter a large cavity ; and each jet of the blood propelled by the contraction of the left ventricle into the aneurismal tumor, produces a sound which is something like that of the stroke of a pair of bellows in blowing them. [Mr. Lawrence here imitated the sound.] You hear a succession of these ; and hence the French have characterized this noise by the apposite term *bruit de soufflet* : *soufflet* is the French for bellows, and the expression means a noise like that of a bellows :—we cannot have a comparison more clearly illustrating this.

Pressure has frequently been tried as a mode of treating aneurisms, and two methods of applying it have been adopted ; one in which the aneurismal tumor and the artery above it have been subjected to pressure, and another in which pressure has been applied simply to the arterial tube. In the former mode of employing pressure compresses have been placed upon the aneurism, and also upon the trunk of the artery above it ; that is, on the trunk of the artery between the tumor and the heart. These compresses have been bound firmly upon the limb, so as to create a general pressure on the aneurismal swelling, and that part of the arterial trunk immediately contiguous to it ; and those who have adopted this have combined with it the other treatment, that I have already described to you under the name of Valsalva's method,—that of depletion, rest, and so forth.

Now we cannot easily perceive how pressure on the external portion of an aneurismal tumor can be likely to prevent the growth of the swelling, or diminish its size ; and I

think we may conclude very safely, that the binding of compresses upon the artery above the tumor will not prevent the passage of blood from the artery into the sac. Considering the matter *à priori*, I think we should not expect any very efficacious influence from this mode : and such is the result of experience ; for in the great majority of instances in which pressure is applied, it seems as unavailing as we might expect.

It has been proposed, however, to subject the artery immediately above the aneurismal tumor to effective pressure, so as actually to place the sides in contact, and keep them so, in expectation of lymph being effused so as to produce adhesion, and consequently obliteration of the tube. Now this can be effectively done in the horse ; that is, if we apply a tourniquet where the artery runs along the leg—screw it tightly, and leave it on for three or four days, inflammation will be excited in the coats of the artery, and the artery will become obliterated in this way. But this cannot be borne by the human subject : the pain is so excessive from pressure of that nature, that it cannot be tolerated even for a short time. You might easily anticipate this result when you consider what kind of pressure is necessary in amputation, in order to prevent the flow of blood through the limb. You find it necessary to screw the tourniquet tightly to prevent the blood from flowing through the artery ; and you find that the pressure thus produced is so painful, if prolonged beyond a few minutes, that the patient is not able to bear it ; and you can easily suppose that no individual could bear the prolonged pressure that I have alluded to, if extended to three or four days.

Without asserting, then, that pressure has in no instance either cured, or contributed to the cure of aneurism, we may say, at all events, that in a vast majority of cases it has totally failed. We may state safely, that a person cannot bear the application of pressure in a degree adequate to produce closure of the artery, and consequently that this method does not deserve any confidence as a general means of treating aneurism ; so that we are not surprised that it has passed into disuse. The only effectual mode, then, of proceeding, is the surgical operation of tying the artery above the aneurism, or at the place where it opens into the swelling. This is, at all events, a rational mode of proceeding ; and, when the operation is performed in a proper way, it is both safe and effectual.

The old operation for aneurism, and indeed that which was performed up to a comparatively recent period, was a very formidable proceeding. It consisted in laying open the aneurismal tumor in its whole extent, clearing out the coagulum it contained, and securing the orifice of the artery, where



it entered the sac, by a ligature including either the upper or lower, or both of the orifices. Now, when you consider that it is by no means always a very easy undertaking to lay bare the artery, to find, and tie it, even when you choose your own situation for seeking it, you will understand that great difficulty must have been experienced in tying the artery where it was attempted in the way I have described, when the orifice of the vessel was connected and implicated with the surrounding parts, and probably deeply seated; as for instance in the ham, where the artery lies close upon the bone, and where you might have perhaps five or six inches in depth of the aneurismal sac to go through before you arrived at the orifice of the vessel. You must consider that the attempt to secure the artery in such cases used to be made when the principles applicable to the ligature of arteries were totally unknown, and consequently the most rude and unscientific proceedings were adopted. Then you must consider farther, the effect that must have been produced by the inflammation that would arise in a large aneurismal sac thus laid open,—leading to suppuration and occasional mortification. When you take these circumstances into view, you will not be much surprised that these old operations for aneurism were almost invariably fatal, and that it was an uncommon circumstance for a patient that underwent this operation to escape with his life. Hence surgeons had very much abandoned it, and considered it better for patients in whom it could be performed, to submit to amputation rather than to such an operation. Mr. Pott mentions aneurism of the popliteal artery as a proper case for amputation, he considered the old operation so desperate an undertaking.

We are indebted to Mr. Hunter for the principle of the modern operation for aneurism. It has been found, however, that some of those who preceded him, particularly some of the older writers, have given a description more or less clear of an operation something similar to that which he proposed for aneurism, so that it is doubtful whether we ought to ascribe to him entirely the merit of originality. There can be no doubt, however, that the discovery is thus far due to him, that he had no acquaintance with those passages in the old writers in which the operation has been described, or supposed to be described; and that he arrived at the conclusions that led him to propose this mode of operation, from a physiological examination of the principles applicable to the treatment of the disease. In this mode the artery is tied at some distance from the aneurismal sac; that is, the ligature is placed upon it in a situation in which it is tolerably accessible—where it can be easily exposed and taken up, and the aneurismal sac itself is not touched—it is left entire.

The consequence of this mode of proceeding is, that the arterial trunk becomes obliterated where the ligature has been applied to it, so that the direct impulse of the heart is removed from the aneurismal sac. The pulsation of this ceases; and the tumor itself generally diminishes, in some degree, immediately after the artery is tied. However, in consequence of this removal of the propelling force by which the aneurismal sac is kept in its distended state, the blood no longer circulates freely through it, but coagulates; and, in fact, the sac becomes completely filled with coagulum, so that the further circulation of blood through it is completely cut off. When this is effected, the aneurismal sac becomes contracted—the coagulum which it contains is then removed by absorption; and, in fact, the aneurism undergoes the same kind of spontaneous obliteration which I mentioned to you as taking place occasionally independently of any operation. In order to produce the changes that I have mentioned it is not necessary that the circulation through the sac should be at once and immediately suspended; for, in fact, the ligature of the arterial trunk above the tumor does not produce this effect. The freedom of the arterial communications is so great, that although the trunk of the femoral artery be tied on the front of the thigh, blood passes into the aneurismal sac below from vessels arising above the ligature, although not with a sufficient degree of force to produce pulsation in the tumor. But the disposition in the parietes of the aneurismal sac to contract, and in the blood to coagulate, are stronger than the distending force, which now produces but an enfeebled current, and the consequence is that the blood coagulates. That the application of a ligature is not always sufficient at once to render the blood stationary in the aneurismal sac, is clearly proved by this circumstance, that in some cases the pulsation returns in the aneurismal sac. When the ligature has been tied it is immediately arrested; but in the course of a few hours, in some instances, the aneurismal sac begins to beat again, and the surgeon is apt to be apprehensive that the artery is not tied, or that something has occurred to render the operation abortive. This is observed in cases both of popliteal and carotid aneurism: however, the pulsation thus produced is but a feeble one;—it lasts for some time, then gradually becomes diminished, and ultimately disappears entirely.

The mode of cure, so far as the aneurismal sac itself is concerned, under the operation as it is at present practised, is just the same as one of the spontaneous cures that I have already had occasion to describe to you, and which takes place by the gradual obstruction of the sac by coagulum. Now, before you are fully acquainted with all the resources of the animal economy, particularly

as regards the circulating system, you might entertain an apprehension that when the main artery of the limb was obstructed by a ligature, the limb would be inadequately nourished—that the blood would not obtain access to the parts beyond the obstruction, and that there would not be a sufficient quantity to carry on the purposes of the animal economy. We find, however, that the communications of the smaller arteries are so free all over the body, that when an arterial trunk is tied in any situation where it is accessible to surgical operation, the parts beyond the situation of such ligature are always adequately supplied, so that no doubt need be entertained on that point in any case. If you place a ligature on the trunk of the aorta, just above the diaphragm, in the dead subject, and if you then insert an injecting tube into the mouth of the aorta, where it comes from the left ventricle of the heart, and throw water into the vessel, you find that it gains access to the parts below the ligature; that, for example, if you open one of the tibial arteries, the water you inject into the orifice of the aorta will keep up a continued stream, even although you have placed a ligature on the descending aorta—so that there is a sufficient freedom of circulation to carry on a supply of blood, even if the aorta itself were tied. You may suppose, that although this takes place in the *dead* subject, it might not equally occur in the *living* subject; but the aorta has been tied in the dog frequently—and it is not difficult to tie the aorta, where it lies on the lumbar vertebrae in the dog; you can tie the aorta and the animal will recover, the parts below the situation of the ligature being perfectly supplied with blood. I have already mentioned, that in two instances the aorta has been tied in the human subject. In both these cases it was tied between the aneurismal tumor and the heart, and there did not appear to be any deficiency in the conveyance of the blood to the lower extremities. The patients, however, did not live long enough to shew the mode in which the circulation was carried on; but the twelve or eighteen hours that they survived were sufficient to prove the fact, that the parts beneath were supplied with blood. The arteria innominata has been tied twice in the human subject, and in both cases the circulation was carried on in the upper extremity, and in the right side of the head—in one instance for three weeks, and in the other for five or six weeks—for so long the patients lived. The trunk of the left subclavian has been interrupted by aneurism, yet the left upper extremity has been adequately supplied. The axillary artery, and the femoral artery, below the crural arch, have both been tied in consequence of wounds, where there has been no previous disease existing, and yet the extremities in such instances have been ade-

quately nourished. You may consider, therefore, that what is called the collateral circulation—that is, those modes by which the circulation is carried on when the main arterial trunk is tied, is adequate to the supply of the parts situated beyond the ligature, whenever you can apply such ligature in the treatment of aneurism.

In the first instance, however, perhaps the circulation is not so vigorous in the limb of which the main arterial trunk is tied, as it is in the natural state. Sometimes, indeed, partial mortification has taken place, as of a toe, where the femoral artery has been tied: this, however, occurs very rarely; and I believe there are but two or three instances where more considerable mortification has occurred in the upper or lower extremities, in consequence of tying arterial trunks. But though this is uncommon, still, in consequence of the possibility of such an occurrence, I should deem it right to adopt all proper means for preserving the heat of the limb, until the circulation be fully established. We should take care not to let the limb be exposed to cold, but to preserve it as nearly as we can at the natural heat.

You will probably inquire, what is the time at which the operation for aneurism should be performed? Whether we should do it as soon as the existence of the aneurism is known, or whether we should wait for some time longer, till the aneurismal tumor has acquired a certain bulk? A notion has very commonly prevailed, that it is desirable to defer the operation for aneurism, under the idea that the obstruction of the arterial trunk increases the collateral channels, and that they gradually become enlarged, so as to be more adequate for carrying on the circulation. It has been advised, therefore, to postpone the operation, not on account of any reason arising from the nature of the disease itself, but from that which I have just mentioned, namely, to give a greater security to the performance of the circulation through the collateral channels. Now it is not necessary to defer the operation on this account, for the resources of the animal economy are fully adequate for it, if we tie the artery as soon as we ascertain the existence of the disease; but the postponement of the operation, which is not necessary for the reasons that I have mentioned, in other points of view is actually prejudicial. The enlargement of the aneurismal tumor interferes in various ways with very important functions, and produces changes that subsequently are more or less injurious in the parts immediately surrounding. Muscles, tendons, and nerves, get involved in the aneurismal tumor, and become firmly connected with it: sometimes the nerves are pressed upon, so as to be spread out and flat. The progress of the tumor when it reaches a bone, causes its absorption. I have seen a

large aneurism in the ham allowed to go on to such a size, that considerable absorption had taken place in the posterior part of the condyles of the femur; and again, when an aneurism takes place in the axillary artery, below the clavicle, the tumor is seated between the pectoral muscle and the parietes of the chest, and will produce absorption of the ribs. If the tumor increases towards the cavity of the chest, it may be productive of serious consequences, without becoming very large. I have seen one or two ribs so far absorbed, as to give way at the back in examining the parts after death. Again, when the neighbouring tendons and muscles, and parts of that kind, are involved, even if we cure the patient by operation, considerable stiffness and imperfection of the motions of the limbs will be the result. For these various reasons, then, it is advisable to operate for aneurism at an early period of the affection; in fact, as soon as the existence of the disease can be clearly and distinctly recognised. There is no kind of reason for deferring the operation; on the contrary, the evils that I have just mentioned are aggravated by its postponement.

The mode of performing the operation is simple. The only object you have in view is to tie the trunk of the artery in such a way that the sides of the vessel may unite, and the tube become obliterated. All you have to do, therefore, is to cut down upon, and expose the vessel, with as little disturbance to it as possible;—to carry a ligature under the artery, detaching it to as small an extent as possible from its surrounding connexions—in fact, if you use a proper aneurismal needle, you can convey a proper ligature under the artery without detaching it further than simply in the track of the needle. Sometimes persons have an idea that they ought to take the artery between their finger and thumb, or put their finger under it, before they apply the ligature; but you will recollect, that in order to effect the union of the sides of the artery, you want a perfect state of the circulation in its coats. The coats of the artery derive their supply of blood from the parts immediately surrounding the tube, and if you detach them extensively, you cut off this supply. If, therefore, in applying the ligature, you extensively detach the surrounding parts, you cannot be surprised that the deposition of lymph does not take place, and consequently the obliteration of the artery failing to occur, that hæmorrhage should afterwards ensue. On the contrary, if you apply a ligature where the artery is closely connected to all the surrounding parts, it receives a regular supply in the ordinary way, and you have every security that this process will be carried on efficiently.

Then with respect to the kind of ligature, and mode of tying it—all the principles that

I have already mentioned in relation to the same subjects, in speaking of wounded arteries, are applicable here. You should employ a small, round, firm ligature, and tie it tightly. You cut the coats of the artery in the way that I have already described—lymph is poured out—it becomes organized, and the wound in the sides of the vessel is united by adhesion. Now when the operation was first introduced by Mr. Hunter, the proper mode of tying an artery was not understood, and hence a great number of cases of failure ensued—that is, in a great number of instances hæmorrhage took place at a greater or less distance of time after the artery was tied. The artery having been extensively detached, and perhaps tied with a large ligature, that bruised the coats, it ulcerated, and effusion of the lymph, necessary for sealing up the end of the artery, did not take place; and thus, when the ligature separated, secondary hæmorrhage came on. The occurrence of these untoward circumstances led surgeons to suppose that it might be advantageous to put a ligature higher up on the vessel, without drawing it tight—or to place a ligature under the artery, ready to be drawn when bleeding came on: these were called *ligatures of reserve*, and by the French *ligatures d'attente*. I think in one case Mr. Hunter employed four ligatures—tying two, and putting two on loosely. You can easily conceive what an excessive detachment of the coats of the artery there must have been, even in order to place four ligatures around it. When, too, you consider the effect which a seton produces in other parts of the body, you can suppose what an inflammation would be produced in the arterial tunics and neighbouring parts by four ligatures—in fact you would be pretty near the mark if you gave them another name, and called them four setons instead of ligatures.

Then an idea arose, that where hæmorrhage took place after an operation, it might be ascribed to some injury which the coats of the artery sustained in tying them; and thus it was proposed, in order to avoid pressing and injuring the parts, that cork, wood, and other substances should be laid upon the vessel; and that a broad ligature should then be applied, so as to press on these foreign substances, but without tying it very tightly. In a case operated on by Mr. Cline, a piece of cork was put on the artery, and tied with a tape; and a variety of other mechanical contrivances have been used to press upon the artery, in order to obviate this much dreaded circumstance—the occurrence of secondary hæmorrhage. There is no doubt that these contrivances were just the very means to favour, or rather insure, the occurrence of the accident; and so long as such principles prevailed, you cannot be surprised that surgeons were



frequently troubled by the occurrence of this secondary hæmorrhage, and that many patients were lost in consequence of it.

In proportion as the principles connected with the application of ligatures became more clearly understood, all these practices were abandoned, and surgeons are now contented with passing single small ligatures round the vessels, detaching the parts to as small an extent as possible, and tying them tightly. Thus secondary hæmorrhage is now rarely heard of in aneurism. I never saw secondary hæmorrhage occur after aneurism, where the operation had been performed properly. I have never seen it take place in any instance in which I have myself tied the artery in aneurism, and therefore I conclude, that in tying them as I have described, it is not much to be dreaded.

I should mention, that bleeding sometimes takes place after an operation for aneurism, when the ligature has separated from the artery, and the cause which produces it is not clearly understood; for several ounces, perhaps half a pint, or even a pint, of arterial blood will be suddenly lost from the wound; but the hæmorrhage being stopped by pressure, it frequently never recurs again.—You are not therefore to suppose, that because hæmorrhage of this kind takes place, it is necessary to proceed immediately to tie the artery higher up. In all such cases we should, in the first place, try the effect of pressure, and in the majority of instances you find that pressure, when thus employed, completely restrains the bleeding, and that this does not recur. A similar occurrence occasionally takes place after amputation, when the ligature separates from the main artery. If, however, the bleeding should be repeated, I know of no remedy except that of tying the artery higher up.

Secondary hæmorrhage may perhaps arise, in some instances, in consequence of the diseased state of the artery where the ligature is applied. We cannot, however, by any means say that the occurrence of aneurism presupposes disease in the artery of the limb where it takes place. That diseased condition in which there is an opaque change, or cartilaginous or osseous deposition forming on the internal coats of an artery, seems to be a kind of change that takes place in elderly persons, in consequence of age; and it is not in the habit of producing aneurism. In many instances of aneurism we find that the trunk of the femoral artery, (supposing, for example, the aneurism is seated in the ham), seems as healthy as any artery can be. Undoubtedly the artery may possibly be in a diseased condition in the part to which we apply the ligature—that is, the texture may be thickened, or there may be some of that opaque deposition on the internal coat; but, at the same time, the existence of such a state of the artery by no means necessarily

leads to the occurrence of hæmorrhage. I have many times seen arteries in that state in amputation, where no hæmorrhage has taken place on the separation of the ligature. If, however, hæmorrhage arose from the diseased condition of the coats of the artery, the case would be very unpromising, because the probability is that the same diseased state would exist in the artery higher up.

I have mentioned to you that the aneurismal swelling gradually lessens, and is ultimately removed by absorption, after the operation. In some instances, however, inflammation takes place in the aneurismal sac, and proceeds to suppuration, and the matter either escapes by the abscess bursting, or we evacuate it by an artificial opening; and I have seen this happen sometimes at a considerable distance of time, from the ligature being placed upon the artery. The occurrence of inflammation in the aneurismal sac is attended with a good deal of local uneasiness, and with very considerable constitutional disturbance. The aneurismal sac, in fact, becomes converted into an abscess; and when we open such abscess, we frequently find that there is a quantity of matter mixed with coagula of blood, and in that state we shall usually find that the contents of the sac are extremely fetid. When we thus come to give issue to a large quantity of stinking pus and coagula of blood, we see pretty clearly the reason why the patient has suffered the serious constitutional disturbance which is generally connected with this event. I have seen this take place in three or four instances, and in none of these has hæmorrhage taken place when the sac was opened. In all the cases where I have found it necessary to open the sac and evacuate the contents, even if the current in the artery had not been previously obstructed by the deposition of a coagulum, probably the changes that had taken place in the sac would have been sufficient to account for the absence of hæmorrhage. All the cases that I have seen have gone on perfectly well after the sac has been opened and the contents evacuated.

Another mode of operating has been proposed, in certain cases of aneurism in which the situation of the tumor has been such as not to admit of the proceeding that I have now described. When an aneurism of the femoral or of the axillary artery reaches so close to the trunk of the body that there is not space for the application of the ligature between the tumor and the heart, or when an aneurism of the carotid artery is situated in the same position as regards the upper part of the chest, it has been proposed to place a ligature on the artery beyond the aneurismal tumor. This principle originated with a French surgeon, of the name of Brasseur, who does not seem himself to have reduced it to practice. It was tried by another

French surgeon, named Deschamps, but the circumstances under which it was tried, and the mode in which it was done, prevent us from drawing any clear inference from the result of that case. It was reserved, in fact, for Mr. Wardrop to repeat this operation, and bring it to the test of practical experience, which he has done within the last few years; and he has published a work on the subject, in which he has explained the principle of the operation, and given some interesting details of his experience.

You are aware that the question whether tying the arterial trunk *beyond* the aneurismal tumor be capable of leading to its cure, is entirely one of experience, and can only be solved by an appeal to facts; and in order to determine it, we require, perhaps, a considerable number of facts more than we at present possess. The circumstances in which an aneurism is placed, in reference to this operation, are not always alike; in fact, we may distinguish two cases in which the results of this operation might be very different. In the first place, we might reasonably expect it to succeed if we could place a ligature upon the artery leading from the aneurismal tumor, under circumstances that should entirely prevent the current of blood through the aneurism from going on; we might expect that the same result would ensue as when we cut off the supply of blood by placing a ligature between the tumor and the heart. But there are very few arteries so circumstanced—perhaps the carotid is almost the only one. If an aneurism be situated on the lower part of the carotid artery, and if we have space to tie the common carotid beyond the aneurismal tumor, we know that no branch is given off between the ligature and the aneurism, and consequently that there can be no blood passing through the tumor; we might, therefore, expect that a coagulum would form, and lead to the cure of the aneurism. Mr. Wardrop first tried the operation in a case of that kind, and the success was complete. It appears that he again tried it in a case of carotid aneurism, and that the operation was complete in that case also, so far as the reduction of the aneurismal tumor went, but the patient unfortunately died of hæmorrhage from the upper end of the artery that was tied—from the remote end; a circumstance which, however, does not at all diminish the force of the inference that is to be drawn from the case, so far as it regards the principle of the operation. When, however, we come to aneurism on the trunk of the axillary, or of the femoral artery, the case is different. If we tie the artery beyond the tumor, we shall find, in either of these cases, that there are important branches going off between the tumor and the ligature, by which probably a current of blood will be constantly kept up through the aneurismal tu-

mor. In a case of aneurism of the femoral artery, for instance, we shall hardly be able to tie the trunk of the vessel above the profunda; and if that artery remain between the tumor and the situation in which the ligature is applied, we should expect, from its magnitude, that an active circulation would be kept up in the aneurismal tumor after the operation—which would consequently fail. In aneurisms of the axillary artery there is a variety of large branches seated near the tumor—so near that we cannot get between them and the aneurism to apply the ligature, and there would be the same circulation of blood through the tumor as if no ligature were applied. The two cases, therefore, seem to me to be very different in point of principle—viz. those in which aneurisms are seated in trunks that give off no branches, and those that are seated on trunks where numerous branches are given off, and where we cannot apply a ligature at the part most remote from the heart, between the tumor and the origin of those branches. Still, as I have already said, the question is one of experience; and until the experiment has been tried, we cannot venture to determine that this operation of applying a ligature on the trunk of an artery beyond the tumor may not be advantageous and effectual, even as regards the femoral and axillary arteries.

That the obliteration of the inferior end of the artery does not necessarily lead to the cure of aneurism, I have had an opportunity of observing; indeed I have mentioned to you an instance in which the inferior extremity of the femoral artery had become obliterated in consequence of the pressure of an aneurismal tumor, and yet the tumor went on increasing. There the natural process of the disease produced the same effect as is proposed to be accomplished by the application of a ligature beyond the tumor; yet the increase of the tumor was not apparently suspended by that event. The impression upon my own mind, I acknowledge, is, that this operation is not likely to succeed on the femoral or axillary arteries, although it has succeeded on the carotid.—There would be great difficulty experienced in performing the operation. The aneurismal tumor often advances considerably up the trunk of the artery, beyond the part where the artery has yielded; so that we cannot get near enough to the actual point where the artery has given way to apply the ligature close to it, and consequently collateral branches would be left between the aneurismal tumor and the ligature, which would keep up the circulation in the way I have mentioned. You will remember, however, that the question of performing this operation can only arise in cases of a very serious kind, where the position of the aneurismal tumor is such as to preclude the performance of the ordinary operation, so that



the patient is left, probably, to almost certain death, unless some attempt of this kind be made. Under such circumstances it may be preferable to try a doubtful expedient rather than to leave the patient without an effort to save him. At all events, you understand that the observations I have now made upon the subject are general; that they do not proceed from a knowledge of the subject derived from my own experience, because I have not seen the operation performed: and in all matters of this kind we must distrust general reasoning; for we often find, when we come to try, that the result is totally different from that which we had previously anticipated.

#### *Varicose Aneurism.*

There is a peculiar modification of aneurism, respecting which I have a few words to say,—it is what is called *varicose aneurism*. It is produced by a wound, generally, of the brachial artery in venesection; and the peculiarity arises from this circumstance. The artery is wounded through the vein; the coats of the artery and the coats of the vein become connected and closely adherent to each other: at the same time the wound or aperture remains between them, so that the blood, instead of flowing out into the cellular membrane from the artery, as it does in ordinary circumstances, passes immediately into the vein; and thus the vein becomes in a manner the aneurismal sac, and an enlargement of the vein takes place similar to *varix*;—hence the term *varicose aneurism*. The condition of the part ultimately is that of a tumor that you feel at the bend of the arm, which pulsates, receiving its impulse from the blood of the artery. In order to produce this effect, of course the external wound of the vein must close, as it does ordinarily after venesection.

Now the swelling generally proceeds to about the size of a walnut or a pigeon's egg, and then remains stationary. The blood passes through the continuous veins in their ordinary course; and inasmuch as these veins form an outlet to the distended varicose part of the vessel, its enlargement is limited. No doubt this would enlarge much more considerably, and ultimately proceed to bursting, but that the blood flows from the part in the natural course of the circulation in the veins. In this state the complaint remains stationary,—it does not acquire a great size, and no operation is necessary for it. The limb perhaps is rather weakened, but in other respects the patient suffers no particular inconvenience. There is a peculiar character belonging to the affection,—a kind of vibration that is communicated to the hand and to the ear, produced by the passage of blood from the arterial trunk through the small opening into the vein. The sensation is almost the same as

that communicated to the hand by the vibration of the cord of a musical instrument; and it has been particularly described, by all who have witnessed this affection, to be what is called a *whizzing* noise—a small thrill or vibration. It is not only felt in the swollen part of the vein, but it also extends along the course of the vessel up the arm.

[Mr. Lawrence here exhibited a drawing of varicose aneurism, taken from the arm of a young gentleman in whom the artery had been punctured about five years before the drawing was taken.] The lecturer continued—He was labouring under very serious pulmonary inflammation, and was bled in consequence of it. Nothing particular was observed at the time: the wound was closed when the requisite quantity of blood was taken, the arm was bound up, and the surgeon who performed the venesection was not aware of any thing unusual. It happened in the course of the night that the patient felt the arm very uneasy, and mentioned that circumstance to the surgeon when he called next day, who took off the bandage and examined the part; and then, according to the description of the patient, he saw a swelling that was *beating* faintly in his arm. The surgeon no doubt saw this also, for he applied a compress upon the tumor, and bound it firmly—probably with the idea of putting a stop to the affection. However, the pressure could not be borne by the patient, and it was necessary to loosen it; but even then it was applied as tightly as the feelings of the patient would admit of. That this mode of proceeding did not prevent the occurrence of varicose aneurism was clear, from the present state of the limb. The patient was much reduced, and confined to his bed, so that he was placed under favourable circumstances for effecting a cure of his aneurism. In the course of five months the tumor had acquired the magnitude represented in the drawing, and from that time there was no increase in its size. The tumor was about as large as a pigeon's egg, of a light bluish tint, soft, and when the hand was put upon the artery the tumor disappeared; that is, the blood passed out through the veins. It was quite soft, so that you could press the blood out at any time. No laminated coagula were deposited; and there was, in this instance, that marked degree of vibration which I have already mentioned as characterizing this affection. Besides the oval soft swelling which is here depicted, there was an enlargement of the veins, particularly of the basilic, extending three inches up the arm. It was tortuous, and about the size of the finger. It is clear that the swelling of the vein at the bend of the arm, and the enlargement above, were owing to the injection of blood from the artery, and not to the impediment of the return of the venous blood; because otherwise the vessels would have



been enlarged below the situation of the wound, whereas they were enlarged above that situation.

I should observe, that in this case no pulsation can be felt at the wrist of the same arm. The diversion of the main current of blood at the bend of the elbow prevented the pulsation at the wrist; and in conformity with that circumstance, the circulation appears enfeebled in the limb generally, so that the limb is livid compared to the other: it is colder and not so strong as the other arm.

#### LECTURE XLV.

*Application of Ligatures to certain Arteries, as the Internal Iliac—Subclavian—Innominate—Aorta.—Wounds of Veins—Phlebitis.*

I SHALL have occasion, gentlemen, to shew you the mode of exposing and tying those arterial trunks which are most frequently the seat of aneurism, and therefore I shall not at present enter into any further remarks respecting particular aneurisms, except just considering the propriety of tying some three or four of them, respecting which the opinions of the profession are perhaps not completely decided. The external iliac artery has been frequently and successfully tied in cases of aneurism of the femoral, seated near the crural arch. There is one case on record in which it is said the internal iliac has been tied for aneurism of the gluteal; and I believe in one case the common iliac trunk has been tied. I do not pretend to say that a ligature cannot be applied to these vessels; but I must represent to you that I should think the operation extremely difficult, and I should attempt it myself with great anxiety, and under considerable doubt as to the possibility of effecting the object.

The main trunk of the artery of the upper extremity may be tied as high up as the *external* edge of the scalenus muscle: a ligature has been applied to it in this situation in various instances, and sometimes with success. The question is, whether it can be tied on the *internal* edge of the scalenus, or whether the trunk of the arteria innominata can be tied on the right side? I should think it preferable to tie the trunk of the arteria innominata, rather than to attempt placing a ligature on the subclavian artery at the inner edge of the scalenus. The arteria innominata is seated behind the first bone of the sternum, and at no very great depth from the surface of the body. In the dead subject certainly it is not very difficult to cut down upon and place a ligature round it; but in the living subject two questions arise—*first*, whether those parts that are supplied by the right subclavian and right common carotid arteries (branches of

the innominata), are likely to receive an adequate supply of blood when the arteria innominata has been tied?—*secondly*, whether the arteria innominata will unite and become consolidated as other arteries do after the application of a ligature? If we place a ligature upon the trunk of the arteria innominata, and throw an injection into the aorta, where it arises from the left ventricle of the heart, we shall find that the injection will fill the vessels of the right upper extremity and the right side of the head; in truth we know that there are very large communications between the arteries in the interior of the head and between those of the right and left side, and probably these communications alone are sufficient to maintain the circulation under the circumstances that I have mentioned. So far as the dead body goes, this experiment is decisive. In relation to the same question in the living subject, the arteria innominata has been twice tied. It was tied in the first instance by Dr. Mott, of New York, and the case was so far successful, that at the end of about three weeks the patient recovered to such an extent that I believe he walked out; however, hæmorrhage came on, and ultimately the case terminated fatally. It was found, that although the right extremity, and right side of the head had been supplied, the process by which the union and consolidation of the arteries ought to have been effected had failed, so that when a probe after death was introduced into the trunk of the arteria innominata, it passed out through the open extremity of the artery in the wound. Professor Græffe, of Berlin, has once tied that artery, and his patient also seemed to be cured: it was considered, in fact, that the case had succeeded, but the patient died of hæmorrhage on the sixty-first day after the operation. At present, therefore, it may be considered doubtful how far we ought to attempt to tie the arteria innominata. I should, for my own part, however, prefer doing so to attempting to tie the subclavian, on the inner edge of the scalenus; nay, I do not know whether we are not as likely to succeed as by passing a ligature on the artery at the external edge of the scalenus; for there are several large arteries coming off from the trunk of the subclavian, and proximity to a large artery is a disadvantageous circumstance in reference to the effect of a ligature, because it impedes the formation of a coagulum—one of those natural processes which favours the consolidation of the artery after ligature.

I have already mentioned to you that in two instances a ligature has been placed on the abdominal aorta; and it is proper to consider the question whether it is right, under any combination of circumstances, to place a ligature upon that vessel. The only case in which it can be matter of question,

is in an aneurism of the external iliac artery, reaching high up into the pelvis. Of the two instances that I have related, one has been already published, in which the abdominal aorta was tied by Sir Astley Cooper; the other was read this season before the Medical and Chirurgical Society, and will be published in the forth-coming volume of their transactions; it was performed by Mr. James, formerly a pupil here, and now one of the surgeons of the Exeter Hospital. The operation was performed by making an incision into the linea alba, through the muscles and integuments of the abdomen, turning aside the bowels feeling the artery where it lies on the front of the vertebral column, and passing a ligature behind it. There can be no great difficulty in doing this; for when you are lying in bed, if you make the experiment on your own person, you will find that you can trace the abdominal aorta from the chest into the two iliacs. There is no great quantity of parts to cut through, and the performance is not difficult.

The reason of practising this or any other operation, is to put a stop to a disease that is likely of itself to terminate mortally; or, if we cannot actually put a stop to, and cure the disease, at least to prolong the existence of such operations, that a ligature of the abdominal aorta seems to me likely to accomplish either the one or the other of these purposes. I cannot say that so far as the two cases which I have just mentioned go, or so far as I should anticipate from reasoning *à priori*, as to the probable result of such operations, that a ligature of the abdominal aorta seems to me likely to accomplish either the one or the other of these purposes. I cannot say that we should expect from it a cure of the aneurism situated under the circumstances that I have mentioned; and I think it much more likely to help the patient on his journey to the other world than to retard his progress. It therefore seems to me that, at present, it is one of those operations which had better not be performed.

#### *Wounds and Injuries of Veins—Phlebitis.*

Wounds of veins, like those of arteries, are attended with a flow of blood, or hæmorrhage. Venous hæmorrhage is much less formidable than that which proceeds from arteries; indeed, under hardly any circumstances should we entertain much alarm at the flow of blood that takes place from a vein, for we find, in general, that the natural powers of the constitution seem adequate to resist this process. The flow of blood from a vein ceases if left to itself; coagulum forms in the orifice of the vessel, and the opening becomes closed. If this does not take place, pressure on the opening is sufficient to arrest the bleeding, and that gives occasion to the formation of a coagulum within the vessel, which will permanently stop the hæmorrhage.

Pressure is the method which we should trust to for arresting hæmorrhage, when it takes place from a vein; and we should not,

unless we actually cannot avoid it, think of applying a ligature.

Veins very easily become inflamed; and the inflammation of a vein, when once produced, is a very serious occurrence—in many cases terminating fatally. The application of a ligature is one of the exciting causes which, in many cases, has led to the inflammation of a vein, which has had a fatal termination; unless therefore under circumstances of urgency, in consequence of the magnitude of the vessel divided, or in consequence of the failure of other means in arresting the bleeding, we should not think of applying ligatures in the wounds of veins. We divide a great number of veins, as well as arteries, in the amputation of a limb—the thigh for example, but we do not find it necessary to apply ligatures for that. In fact, for the most part, veins are furnished with valves, which prevent them from bleeding. Not uncommonly, however, we experience from the femoral vein so profuse a hæmorrhage, as to render it necessary to adopt some means for stopping it. The deep-seated veins are not so well furnished with valves as the more superficial; and if the femoral vein bleed freely, it may be well to apply a ligature upon the orifice, without drawing the knot tightly, and thus to stop it during the time that you are tying the other bleeding vessels; and then, if you take off the ligature, you will probably find that the vein will not bleed. But if, after securing the other vessels, we find that a large stream of blood still issues from the femoral vein, we seem to have no other course except that of tying it. I have had occasion many times, in the amputation of the thigh, to tie the femoral vein, and I cannot say that I have seen any unfavourable result from it; yet it ought never to be resorted to, except under circumstances of absolute necessity.

The opening which we make into a vein at the bend of the arm, for the purpose of venesection, is a wound of a vein; and you know very well that simple pressure, and that not considerable, suffices to stop the efflux of blood from it. It is not my intention, and I do not deem it necessary, to enter into a description to you, of the mode in which a vein is to be opened in venesection. I may observe, however, that though it is the first operation that is usually learnt, and though most of you understand, and are capable of performing it, it is perhaps not one of the easiest of surgical operations to perform neatly, effectually, and safely. When I say *neatly*, I speak of opening a vein and receiving the blood that flows from it, without letting it escape over the dress of the patient, or the apartment in which the bleeding takes place; when I speak of doing it *safely*, I mean performing it in such a way as to run no risk of injuring the artery, which is seated near one of the veins in which the

bleeding usually takes place ; and when I say *effectually*, I speak of closing the wound, and applying such a bandage to the arm, and directing the patient to employ such means, as will prevent the occurrence of inflammation ; for I must observe to you, that in many cases the simple wound inflicted in phlebotomy has been the exciting cause of fatal inflammation of the vein. This operation, therefore, although regarded as so simple, that one the least initiated in the profession may perform it, yet when you come to consider the consequences to which it sometimes leads, is not to be deemed so very unimportant.

Inflammation of a vein has received the technical name of *phlebitis*.  $\Phi\lambda\epsilon\psi$  is the Greek for vein ; hence the term *phlebitis* is merely the word, with the termination *itis* added to it, to denote inflammation. When inflammation occurs in a vein, the patient, in the first instance, is admonished of its existence by uneasiness in the part, and a sensation of stiffness on motion ; and these are gradually augmented until the patient perceives considerable pain in the situation of the inflamed vessel. The vein swells, the coats become thickened, the inflammatory action extends to the cellular substance, which becomes the seat of effusion ; and thus the vein itself, and the part in which it is seated, undergo a general tumefaction. When the inflamed vein is seated superficially, and when more than one vein are involved in the affection, we shall find a considerable swelling of the part, and the increased action extends to the skin, which then becomes red. The skin is red, tense, and considerably painful ; and this change extends downwards along the fore-arm, and upwards along the arm. When these changes take place in the veins, the orifice (in the case of phlebotomy) from which blood has been taken, instead of having united, is found to have separated, or as people commonly call it, *festered*. There is the appearance of matter in the opening of the vein ; and after the inflammation has existed some three or four days, we shall find that a thin matter, which is sometimes reddish from an admixture of blood, escapes from the opening. Sometimes it appears like pretty good pus, but more commonly it is thin, and has a reddish tint ; and sometimes it flows in considerable quantity. When the parts are thus swelled, and the skin red, there is, of course, considerable tenderness on pressure, so that when we touch the part it will give the patient pain. In conjunction with these local changes, we find a considerable febrile disturbance of the system taking place. There is an excitement of the pulse, which becomes more full and frequent—sometimes being as much as 130 or 140 in a minute ; the tongue is white ; there

is frequently sickness, nausea, and vomiting, a costive state of the bowels, and thirst. Together with these symptoms there is usually a considerable degree of anxiety and restlessness: the patient cannot sleep at night, but is very uneasy, tossing himself about ; and likewise feeling very uncomfortable during the day-time. There is generally an uneasy sensation about the præcordium ; and the patient is apt to be low-spirited, entertaining gloomy apprehensions respecting the issue of the case. As the disease advances, something like delirium comes on ; yet, if you speak to the patient, and rouse him, you generally get an answer : you hardly find any thing very decided in the shape of delirium. Frequently there is a remarkable degree of irritability about the patient ;—a slight noise, or a slight impression of any kind, produces a considerable effect on the nervous system. The patient is very fretful, and very easily excited. The skin generally assumes a sallow, and often a yellowish appearance ; the features become sharp and contracted. The febrile disturbance does not long assume an active inflammatory character. That part of the disease soon passes over, and a condition more allied to the typhoid state comes on ; the tongue becomes dry and brownish ; there is great prostration of strength ; sordes appear about the mouth ; and the general condition of the patient assumes the character which is denominated *typhoid*. In this state we very frequently find symptoms of active inflammatory affection shewing themselves in some internal or external part of the body: sometimes inflammation occurs in the chest or abdomen—sometimes in some of the joints of the body. Under the continuance of this general febrile disturbance, and these external or internal inflammations, the patients sink, dying at various periods of time from the first occurrence of the symptoms. A case is mentioned by Mr. Hodgson, in his work on diseases of the arteries and veins, in which inflammation of the femoral vein came on in consequence of a ligature applied upon the saphena, where the patient died on the fourth day. I have seen cases where this affection has terminated fatally, where the fatal event has been protracted to seventeen or twenty days.

When we come to examine these cases after death, we find, if the inflammation of the vein be in a very early stage, that the coats of the vessel are thickened, and that its internal lining is red ; the cellular membrane surrounding the vein being infiltrated with serum. At a latter period, we find these changes taking place to a more considerable extent, so that the cellular membrane of the region in which the affection has taken place, is considerably thickened ; partly perhaps by a deposition of lymph, and partly by serous



effusion. The coats of the inflamed vessel are considerably thickened and indurated, and the cavity of the vessel is lined by a stratum of lymph, which occasionally adheres to its sides, and, when we cut the veins open, gives it an appearance as if the tube was plugged up with the lymph or coagulated blood. When we examine the surface of this adventitious covering, towards the vein, it seems like an effusion of lymph closely connected to the vessel, but the surface towards the centre of the vessel has somewhat the appearance of coagulated blood; and we have various gradations of these appearances—some parts exhibiting the yellow appearance of effused lymph, such as would take place from a serous membrane in a state of inflammation, and the other parts often exhibiting the reddish appearance, more like a coagulum of blood.

[Mr. Lawrence illustrated this by a specimen of the vena cava, which was completely covered by a reddish kind of fur. He also exhibited a volume of the *Transactions of the Medical and Chirurgical Society*, containing two or three figures representing the appearances of this affection; one of which was that of an external iliac vein, which was filled up with this deposition; a second figure represented the femoral vein, filled up with coagulum of blood; a third figure was that of the vena cava, exhibiting the affection in a more advanced state, where there was a regular deposition of lymph.]

These changes extend to various distances along the vein, and in the case of inflammation excited by a puncture in venesection, if it should occur in the basilic vein, for instance, we should probably find it reaching as far as the termination of the basilic in the axillary vein. If it occur in the cephalic vein, it may reach a few inches higher up, sometimes to the neck, extending to the subclavian vein, as far as the termination of that and its junction with the internal jugular. These changes also extend downward, in the course of the circulation. Those veins that are seated on the fore-arm will become thickened, hardened, and will contain either lymph or pus in their interior, as far as the hand; for I should mention that it may happen that the veins, instead of being plugged up by this deposition of lymph or coagulated blood, are sometimes thickened, or rendered rough and irregular on the inside, and contain pus in a fluid state; so that the inflammation which attacks the venous coats, and particularly affects the internal lining, produces either a deposition of coagulated lymph or the formation of pus.

If we examine them at a later period, when the inflammation has been reduced, we shall find that the lymph is absorbed; that the veins have their cavities obliterated;

that they are reduced either into the state of solid, impervious cords, or else, when we cut them open, we find that they are filled by a kind of adventitious membrane, something like the adhesions that form between the contents of the abdomen and the parietes of that cavity. That is the appearance which the veins will assume when the inflammation has gone through its stages and has been cured, or ended naturally.

But then in fatal cases we find various other affections of important parts which lead to the fatal event; for you will easily understand that inflammation of a portion of a vein considered in itself, would not be sufficient to destroy the life of the individual. If it be seated in the basilic or cephalic vein of the arm, and no other parts be affected, you cannot suppose that the patient will lose his life from it; but phlebitis terminates fatally, in consequence of its secondary effects, that is, from effects which the inflammation in a vein produces on other parts of the economy. These other effects consist of inflammation of one or other of the serous membranes, sometimes affecting several of them simultaneously; inflammation of the pleura ending in the deposition of a sero-purulent fluid in the cavity of the thorax; inflammation of the lungs with a deposition into their texture of a kind of imperfect purulent fluid—that kind of deposition in the texture of the lungs which is found to take place frequently after serious external injury, a deposition which we cannot exactly call lymph, and which we cannot correctly call pus, but which appears to be something between them—a sero-purulent deposition: sometimes a similar deposition occurs into the texture of the liver, or some other of the viscera of the abdomen;—inflammation of the pericardium, sometimes of the muscular texture of the heart, with depositions of the nature that I have alluded to; inflammation of some of the joints—of the synovial membranes, with effusion of pus into one or more of their cavities. These are the kinds of changes which occur as the secondary consequence of phlebitis, and which assist in producing the unfavourable termination in those instances which end fatally.

(To be continued at page 289—opposite.)

#### BOOKS RECEIVED FOR REVIEW.

Modern Medicine influenced by Morbid Anatomy. By Leonard Stewart, M.D. &c.

Address of Earl Stanhope, President of the Medico-Botanical Society, for the Anniversary Meeting, Jan. 16, 1830.

Remarks on Nervous and Mental Disorder, with especial reference to Recent Investigations on the subject of Insanity. By David Uwins, M.D.

W. WILSON, Printer, 57, Skinner-Street, London.

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SATURDAY, MAY 22, 1830.

LECTURES ON SURGERY,

*Delivered at St. Bartholomew's Hospital,*

BY WILLIAM LAWRENCE, F.R.S.

LECTURE XLV.

[Concluded from the preceding page.]

*Phlebitis, continued; its Pathology and Treatment—Varix.*

Two or three years ago I had several cases in the hospital, all occurring nearly together, in which phlebitis ended fatally, and in which I had an opportunity of observing the principal appearances that were produced in consequence of this affection. In one of these instances, which was that of a patient who came to the hospital with an old ulcer of the leg—a large man, in whom the part had become inflamed, and the ulcer had extended considerably in consequence. It was necessary to bleed him, and to keep him low, and under that treatment the leg got well. But the wound made by the lancet in venesection did not unite; it festered, and in fact phlebitis took place. After the inflammation had existed for a few days, the knee-joint of one side swelled considerably, and this swelling extended to the thigh of the same side generally; then the opposite shoulder-joint swelled, and at length the patient died. On examination, we found that the inflammation of the vein seemed to be in a natural course towards a cure, but the synovial membrane of the affected knee was inflamed in the highest possible degree; the whole surface of the joint was a bright red colour, and its cavity was filled with pus. There was a deposition of pus generally into the cellular texture of the thigh, beginning immediately on the outside of the knee joint, running in the interstices of the muscles, and affecting the cellular membrane of the entire limb. There was a similar deposition of pus surrounding the shoulder joint of the op-

posite side. I had a case some time ago under my care, at Bedlam, and the patient, who was in a state of mental derangement, had been sent from the country. He was bled in the arm before he set off, and it seems that they took no particular care to bind up the arm properly before they sent him on his journey. When he arrived at the hospital, although he was in a state of mind not to give a clear account, yet he said that he had pain in the arm. On examining him, I found that he had been bled, and that the limb had been confined tightly from the means adopted to restrain him on the journey. There was the impressure of a cord, or something used in confining him, that had made a visible impression on the arm. Swelling was present, besides this painful state of the arm; and thus it was pretty clear, though the man could not give a good account of himself, that inflammation of the vein had been brought on, partly in consequence of venesection, and partly in consequence of the external irritation from the mode of confining him. Means were adopted for reducing the local inflammation, which had a very favourable effect; the arm became considerably less swelled, the redness disappeared, and, in fact, before the patient died, the arm had assumed pretty nearly its natural size and appearance; however, there was considerable febrile disturbance, a white tongue, want of sleep, a great degree of restlessness, and, as the affection went on, a peculiar difficulty of breathing seemed to join itself to the other symptoms. The man occasionally complained (but we hardly knew whether to ascribe it to actual sensation, or the state of mind he was in) that he had hot air in his throat; and, indeed, he seemed to have a sensation about the throat that was particularly painful. He died. I examined the case after death, and I found that the affection of the vein extended from the basilic into the axillary vein, and along the trunk of this and the subclavian as far as the termination of that trunk, and the junction of

the internal jugular, where it abruptly ceased; but in the original seat of the inflammation the affection seemed to be pretty much on the decline. The chief morbid changes in this case were found in the heart and pericardium. Within the pericardium there were several ounces of thick, turbid, fluid serum, with a good many flakes and much purulent matter mixed with it. The whole of the pericardium covering the heart, and the reflected portion of this membrane, were highly inflamed—more so than I had ever seen them before. The minute vessels of the membrane were excessively injected, so as to give the whole of it a bright red colour; and in one part there was ecchymosis under the membrane. The whole of the left ventricle of the heart had a bright scarlet colour, in consequence of the injection. At one part of the left ventricle, in the midst of this bright red, there was a yellow spot observed, which might be about the size of a sixpence. On making an incision to examine the fibres of the heart, I found them broken down, and mixed with a yellow purulent fluid. It was the same kind of purulent deposition in the muscular substance of the heart which is so often found, in similar cases, in the substance of the lungs or liver.

It is an interesting inquiry in these cases how the inflammation of the vein leads to the effects that I have now been describing? How the inflammation of the vein, in the first instance, excites that febrile disturbance of the system which is a marked circumstance in cases of phlebitis? And how this inflammation of the internal parts, quite remote from, and apparently unconnected with the original seat of mischief, become superadded to the affection, so as to lead to the fatal termination?

An idea has been entertained, that the inflammation of the vein is propagated along the lining of the vessel to the heart. This, however, does not accord with what we find on examination after death. We sometimes find that the inflamed portion of the vein does not extend very far from the seat where the external irritation has been applied to it; and in all instances we find it ends short of the heart. I do not know of any instance in which there is reason to suppose that the inflammation has been actually communicated to the heart; on the contrary, in the cases that I have mentioned, where it reached as far as the termination of the internal jugular, the vein from that point—the superior vena cava, was perfectly healthy. In other instances it has not reached so far.

It has been the opinion of some that the mischief in question arises from the pus which is formed in the inflamed vein passing into the circulation. This opinion has been given by M. Breschet, in an article on phlebitis, in the *Dictionnaire de Medecine*. The same opinion has also been given by Mr.

Arnott, in an elaborate paper on Inflammation of the Veins, contained in the XVth volume of the Transactions of the Medical and Chirurgical Society. Both these gentlemen advert to the effect produced by injecting pus, or other acrid substances, into the veins of living animals; and they say, that in these instances the purulent secretion produced from the inflamed vein passes, in the course of the circulation, into the system generally, and thus excites the mischief.

With respect to the causes of phlebitis, we find, in most cases, that it is traceable to some external injury, or some direct external application: thus the wound that is inflicted on the vein in phlebotomy has, in many cases, produced this affection; and it happened in one instance, that terminated fatally, three or four years ago, in the hospital under my care. This was a case in which a young woman had received some injury, for which she was bled in the arm. She was by occupation a weaveress, and she went to her work after the phlebotomy had been performed. She continued to employ her arm in weaving; but on the second day after the bleeding, inflammation of the vein came on. This female, on the following day, was received into the hospital, labouring, in a marked degree, under all the general and local symptoms of phlebitis, and she died from the purulent deposition in some of the joints; but I was not allowed to open the cavity of the chest, or the abdomen, so that I cannot exactly tell what state these were in. I saw phlebitis arise in a gentleman, under my care, on whom I performed a slight operation. I bled him in consequence of symptoms that ensued after this operation. He had come from India, but was a young man, and apparently healthy. However, the wound in the arm led to inflammation, and he died in consequence of it. And I may here state, that in performing operations on persons coming from India, sometimes a fatal disturbance arises where we should not expect that effect; so that probably, from the diseases that Europeans experience in those climates there is some unfavourable effect produced on the system which renders them less able to undergo operations than the persons that we ordinarily have to deal with in this country. This explained to me a circumstance that I had sometimes been rather puzzled about—that individuals should be advised to go and get operated upon in England. I suppose that the surgeons in the East Indies find that operations do not turn out very favourably there.

Other external injuries applied to a vein are capable of producing serious inflammatory affection of the part. In consequence of the changes that take place during parturition, and of the mode in which the veins of the uterus are exposed, by the separation of the



placenta, as well as in consequence of the effects produced by portions of the placenta remaining adherent, inflammation will arise in the veins of the uterus, and will be extended from them to the internal iliac, and even to the external iliac and femoral veins, and thus become the source of a serious affection, called phlegmasia dolens; or if propagated to the vena cava, may lead to fatal consequences. The researches of Dr. Lee, of Argyll Street, on this subject, have contributed to place this subject in a clear light. His remarks upon it will be published in a forthcoming volume of the Transactions of the Medical and Chirurgical Society. It seems, from what he has stated, that inflammation occurring in the veins of the uterus, and propagated from them to the internal and external iliacs, and some other veins, is the source of some of those obscure affections which have been recorded under the general name of puerperal fever. It is not unlikely that in compound fracture, and other serious injuries, inflammation of veins may arise; and thus that phlebitis may, without our being aware of it, have a greater share in producing some of the consequences of these injuries than is supposed. This point, however, is not yet sufficiently investigated.

The next point of our inquiry is, as to the treatment of this affection. I believe the best plan of treatment consists in applying, as early as possible, leeches, in large number, over the veins in which the inflammation has originated: in attempting by the local abstraction of blood—and by such other means as are likely to reduce inflammation—to overcome the inflammatory disturbance in the parts.

The considerable febrile disturbance of the system which exists in the early period of the affection, leads us, in many cases, to infer that general bleeding would be of service; and, accordingly, many patients have been bled freely from the arm in cases of phlebitis. The febrile disturbance is generally lessened by such bleeding; but although the symptoms are lessened for a time, I think we do not in general find that any corresponding influence is produced in putting a stop to the affection. The symptoms come on again, and soon the period of active inflammation passes by, and a condition, of a typhoid character, comes on, in which general depletion is not only unnecessary, but would be absolutely prejudicial; indeed, in the advanced stage of the disease, where you have great anxiety and restlessness, and where there is a great degree of irritability, with depression of the nervous system—where the tongue begins to become brown, with urgent thirst—we are at a loss to know what to do, for none of the means that we usually adopt are of much advantage. I have given mercury pretty freely in that state without seeing it do much

good. I have tried narcotics, such as hyoscyamus, opium, and other sedatives, perhaps with a little benefit, but without much effect in mitigating the progress of the disease; for when the disease has gone to a certain point, and these internal affections which I have alluded to have taken place, we seem to have little power in controuling the disorder. The intractable nature of the affection, therefore, holds out a strong motive for adopting every means in cases of injury, or wounds of veins, that are calculated to avert the occurrence of inflammation, and is a reason for adopting, in the early period of the affection, when the inflammation first comes on, those local anti-phlogistic means—leeches, and so forth, that are calculated to lessen the inflammation of the part; for if we neglect these two points, and allow the disease to become fully developed, the patient in most instances is lost.

#### *Varix.*

The veins are subject to an affection which is denominated *varix*, that is, enlargement of the vessel, with thickening of its coats, and this occurs chiefly in those situations of the body in which the return of the blood takes place contrary to its gravity, particularly in the lower extremities. In veins that are thus seated, not uncommonly attacks of inflammation come on; the coats of the vein become thickened; deposition takes place in them; and thus they become very considerably enlarged in size, and assume a tortuous and irregular course. This affection often exists for a great number of years, and sometimes will extend to the whole of the veins of the lower extremities, which leave an irregular knotted appearance, rising above the skin, and projecting at all parts of the limb. You are often surprised to see such general changes of the superficial veins of the limb, and the patient apparently experiencing very little inconvenience from it. Frequently, however, these varicose affections of the veins are the source, not only of inconvenience, but even of danger. Such diseased veins are of course more liable to the occurrence of inflammation than others. The distention sometimes becomes very considerable; the coats of the vessel get thin, and at a certain point they give way and break; and thus a large quantity of blood may be lost from the rupture of such veins. The swelling of the veins, particularly under considerable employment of the limb, is attended with great pain and inconvenience, and limits the patient very much in his exertions in walking, and so forth.

If the varicose veins become very actively inflamed; if they become enlarged and hardened, and the skin over them red; and if it is painful to the touch, we must treat them as we should inflamed veins under any other circumstances. We must take blood

from the part, and employ other means necessary to reduce the inflammation. When the inflammation has been reduced, the best mode of treating varicose veins is by pressure—pressure, by means of a well applied bandage, or adhesive straps, or soap plaister. These are the various modes by which pressure is to be applied to the limb; and they will often limit the progress of the affection, keep the veins within a certain size, and enable the patient to use all ordinary exertion without inconvenience.

It is a question whether we can, with any safety, proceed farther in the treatment of varicose veins of the limb than I have mentioned; whether we can do more than apply leeches, or other means calculated to reduce inflammation, and then use pressure: in other words, whether we can, with safety, adopt means for effectually diminishing the size of the veins? For this purpose, it has been recommended at various times to tie the trunk of such enlarged veins; to make a division of the trunk, and actually to cut away the vascular enlargement. If the main trunk connected with the varicose vessels be divided or tied, certainly a considerable diminution of this enlargement of the veins will ensue. But here you must recollect the danger that will arise from the application of a ligature to a vein under such circumstances—a vein by no means in a healthy state. You must recollect the danger of exciting by such an operation inflammation of the vein, (phlebitis), and, in truth, patients have died in many instances in consequence of the application of ligatures to veins for this purpose. Individuals who have been in good health, and have had nothing but this local inconvenience, that might easily, by safe means, have been kept within a moderate compass, from a desire of radically getting rid of it, have had the operation performed, and have died in consequence. This has taken place so often that no one would now think of adopting the plan of ligature in these cases. Another mode of attempting to cure the affection has been by cutting away a part of the enlarged vein—but this operation also has terminated fatally in many cases. The only safe proceeding of this kind, and even that I should not deem absolutely safe, is the one proposed by Mr. Brodie; it consists in dividing the varicose vein under the skin; making a very small opening with a slender and narrow knife, which is introduced at the side of the vein. It is a curved knife, cutting on the convexity, very narrow pointed; it is introduced at the side of the vein, and carried, with the flat surface, horizontally under the skin, between it and the vein. Then the knife is turned, so that the convex cutting edge is towards the vein, and drawn out, so that the vein is incised under the skin, no further opening being made than is just sufficient to

introduce the narrow knife into the skin at the side of the vein.

In general this operation is not attended with so much risk as accompanies either the excision of a part of the varicose vein, or the application of a ligature to it. In those instances, therefore, where it is necessary to do any thing at all in the way of operation, this is the preferable mode. But the great danger which attends all modes of wounding veins, particularly those which are in this diseased state, has led, I believe, pretty generally to the abandonment of attempts of that kind; and surgeons are now satisfied with the means that I have already described to you, as of a more safe character for the treatment of this affection.

## LECTURE XLVI.

### OSSEOUS SYSTEM.

#### *Injuries of Bone—Exfoliation—Fractures.*

GENTLEMEN,—Although the bones appear at the first view so different from the soft parts of the body, the organic elements which compose them are essentially the same. Cellular structure, arteries, veins, absorbents, make up the basis of composition in both instances. Hence we find that bones exhibit the same living phenomena, whether in health or disease, as the soft parts; they are equally capable as the soft parts of *repairing injuries*; they go through the processes of inflammation, swelling, suppuration, ulceration, granulation, mortification. They are also susceptible, like the soft parts, of various *organic* changes; thus they exhibit sarcomatous, steatomatous, cancerous, fungoid, and melanoid changes of structure. The various diseased actions, like the healthy processes of nutrition, absorption, and so forth, are essentially the same in the bones as they are in the soft parts of the body—the only difference is in the form or appearance under which they present themselves, a difference which is obviously referrible to the difference of structure in the two instances. The chief character which distinguishes both the healthy and the morbid processes that occur in the bones from those that take place in other parts, is the comparative slowness with which they are affected. You find that all the processes of disease, as well as of health, go on much more slowly in bone than in the soft parts.

From the hardness of their structure, bones are hardly susceptible of that kind of injury which is so frequent in the soft parts from incised wounds, yet they are often exposed in wounds, and we have an opportunity of seeing the mode in which the effects of such injuries are remedied. The bones are necessarily divided in the operation of ampu-

tation;—when the thigh, for example, is amputated, we have the bone to saw through. We place the soft parts over the bone, and these, perhaps, unite by adhesion; they cover the bone, they become adherent to it, and the wound goes through just the same process that it would have done if it had consisted of a wound of the soft parts only. We see no circumstances which indicate to us any peculiar character from the division of bone in such an instance. It may happen that such a wound does not unite by adhesion; although the soft parts are brought together, they do not heal, but suppurate, and they subsequently unite by granulation. Under these circumstances, we shall see that the bones produce granulation as well as the rest of the wound. Those red roundish prominences to which the term of granules is given, spring from the surface of the bone generally, and they unite with the granulations which are produced by the surrounding soft parts, and enter into the composition of the common cicatrix. It may happen under such circumstances that the soft parts retract, and the bone protrudes from the wound, that is, a certain portion of the bone protrudes and becomes denuded of the investing membrane, or periosteum—it perishes, and then it is separated from the sound part of the bone by a process which I shall presently mention to you.

It is not uncommon to have the bones exposed in wounds. A bone may be exposed, but still covered by its periosteum, and if the soft parts are brought together over it, the process of adhesion will be just the same as if there were no bone in the case. The bone, however, may be completely laid bare, that is, it may be denuded—the periosteum actually detached from the bone, this being either not injured at all, or but superficially marked by the injury which has been inflicted. Under such circumstances we lay the soft parts down, we bring the integuments together, and approximate them over the surface of the denuded bone. They will probably unite by adhesion, cover the bone, and the process of union will go on just as if the bone had not been exposed. It occasionally happens, however, that the parts do not unite, that the wound becomes an open one, and granulates, and then a certain surface of the bone is exposed—that is, in common phrase, *denuded*. We see a portion of bone of a whitish or yellowish appearance, and it appears to us as if it were dead. If this portion of bone be not considerable, and if the surface of the wound be kept moist—if it is not exposed to the atmosphere so as to be allowed to become dry, we find the bone does not assume actually a dead white colour, but there is a kind of semi-transparency belonging to it—it retains something of a pinkish hue, and after some days have

elapsed, probably numerous little pinkish spots appear on the surface of the bone, and these gradually rise till they assume the appearance of granulations, and in fact they are granulations springing out of the denuded surface of the bone. In this way we shall find that the exposed surface of the bone will be gradually covered by a production of a granular kind, very similar to that which takes place from the soft textures of the body, and the granulations which thus arise on the denuded surface of the bone unite or inosculate with the granulations produced from the neighbouring soft parts, and a common cicatrix covers the whole. It is not uncommon to see this process in exposed portions of the cranium, and I have seen instances in which a very considerable portion of the surface of the cranium, and that in elderly persons, has thus produced granulations, and become covered by the production of new flesh, so that a wound, accompanied with extensive exposure of bone, has thus become consolidated without any of what is technically called *exfoliation* of the bone taking place.

I remember an instance of a wound of a contused and lacerated kind in which nearly the whole of the exterior surface of the patella was exposed—it was quite denuded of the periosteal covering. It assumed a brownish appearance, from which I supposed that the surface of the patella would separate. This, however, did not take place; the soft parts united, granulations sprung from the surface of the patella, and no separation took place. I have seen an extensive exposure of the tibia in a compound fracture of the leg, in which I supposed that exfoliation must necessarily ensue, but in which the surrounding soft parts advanced over the bone, granulations sprang up on the bone itself, and thus the wound was healed by the granulating process—partly of the soft textures, and partly of the exposed surface of the bone.

Occasionally, however, the surface of the bone when thus denuded becomes perfectly dead; it then turns of a dull white, and afterwards assumes a brownish or even black colour: when it thus loses its vitality, no pink appearance remains, and we never see any production of those pink spots or irregular prominences. Under such circumstances the portion of the bone exposed dies, and it is to be separated from the healthy bone by a process which is essentially similar to that which takes place in the separation of a slough from the soft parts. Now this, in the case of bone, is called *exfoliation*: it is the process by which the projecting portion of bone, in cases of amputation, is detached from the living bone, and by which a portion of bone which has been denuded is separated, or by which a portion of bone in other parts of the body, when it actually



perishes, is detached from the living part. *Exfoliation* means the separation of a leaf, and in fact the portion of bone which is detached in these cases, is often a thin plate. Hence the name of exfoliation has been given to it.

We find in these cases, as in cases of the mortification of soft parts, that a groove is formed between the dead and the living parts—it seems as if a portion of the substance were eaten away. From the groove which is thus formed, granulations spring up, and these granulations form one mass with the surrounding soft parts, so that the portion of denuded bone is thus surrounded by a sort of ridge of these granulations. The absorbents gradually eat into the bone, deepening the groove which I have just mentioned, extending it under the dead part of the bone, and, in fact, continuing their process until the dead portion is completely undermined and separated from the living. When this process is complete, the exposed part of the bone is found loose when you touch it, or it becomes loose by the application of a very little force. You easily detach it; and when this dead part comes away you do not find that the surface beneath is rough and hard, like that of bone; on the contrary, when the dead part is separated there remains behind a bed of granulations which have gradually passed from the original groove under the dead part, and completed the separation. There is a mass of soft vascular substance remaining, and the part of the bone which is separated bears evident marks in its appearance of the action of the absorbent vessels which belong to these granulations. If you look at any piece of bone thus detached, you see that it presents a number of irregular rough prominences and depressions, which correspond to the prominences and intervals between the granulations.

[Mr. Lawrence here exhibited some specimens in illustration.]

This process, then, of the separation of the dead or exfoliated parts from the living portion, is effected by *absorption*. The bony substance is taken up by the absorbents of the granulations, and thus there is an actual vacancy made between the dead and the living parts. Now it has been stated that this process of absorption must be preceded by some softening of the bone that is to be removed. It has been represented, that we cannot suppose that the absorbents are capable of taking up the solid substance of the bone, and of removing it, but that there must necessarily be some solvent juice secreted, by which the part that is to be removed is previously reduced to a soft state, so as to fit it for the action of the absorbent vessels. If we look at the surface of a portion of bone thus removed, we cannot see a vestige of such solvent action. We see

sharp points and ridges, which shew that it must necessarily have been removed without any thing like solution taking place. There can, in my opinion, be no doubt that the process is simply that of absorption; and, for my own part, I can see no more difficulty in supposing that absorbents should remove bone than in acknowledging what we all know to be the case, that arteries deposit bone.

[Mr. Lawrence here exhibited some specimens, to shew the nature of the process when a portion of bone perishes, and pointed out the soft granulations extending between the dead and the living parts of the bone.]

That is the nature of the process (continued Mr. Lawrence) wherever it occurs; whether it takes place in a part of the long bone, such as the femur, when divided in amputation, or in part of a broad bone, such as those of the cranium.

You will observe, from what I have now stated to you, that the separation of the periosteum from a portion of the bone does not necessarily involve the death of that portion. It is true that the principal supply of blood-vessels proceeds from the periosteum; so that if you have the membrane extensively detached, that portion of the bone will die. But the periosteum is not the sole source of the supply of blood to the bones. There are openings which extend into the interior, for the nourishment of the bone, enter, which ramify in the medullary cavity, and there inosculate with small branches that proceed from the periosteum. Thus the partial separation of the periosteum does not involve the death of the bone from which it is separated, because blood may be conveyed through these nutrient branches.

The *treatment*, then, of a wound in which the bone is exposed, ought not to be conducted on the supposition that this must necessarily separate or exfoliate—yet this is the principle which, in many instances, has guided the treatment of such wounds. You have been directed to insert various extraneous substances, in order to keep them open, to favour the separation of the bone. What are called *tents*—*i. e.* pieces of lint, sponge, plugs of various kinds, have been introduced, to prevent the edges of the wound from approximating, and to allow of the separation of the bone, which it has been supposed must necessarily exfoliate. Nay, when a bone has been wounded, various powerful substances, acids, caustics, and so forth, have been applied to the bone, with a view to promote the separation. All these proceedings were upon an erroneous principle; if the bone is to exfoliate, and must be separated, it will find its way out without our taking the trouble to keep the wound open for that purpose. If

the bone has actually perished, you cannot hasten its separation from the living part by any application of acid or other strong substances to the dead bone. The only judicious course you can pursue in such a wound, is to unite the soft parts over the bone, and do all in your power to promote their adhesion. In a great number of instances you find that a wound will unite readily, and that no separation whatever of bone will take place. But if this does not occur, the bone, when detached, will find its way out without your assistance.

### *Fractures.*

Although the bones are not liable to those kinds of injuries which are so common to the soft parts—that is, to incised, punctured, and other such wounds—they are frequently subject to a species of injury peculiar to themselves—that is, they are liable, under the application of external force, like any other hard substances, to be broken. They give way under the application of certain external violences, and this kind of injury is called *fracture of a bone*; which, I apprehend, you will understand just as well under that simple term as if I were to give the scientific definition of fracture, which I believe is—*solution of continuity in a bone*.

Now the bones, like other organized parts, possess in themselves the power of repairing this kind of injury; the only difference in the process which takes place in the case of such injuries affecting the bone being that it is slower in its course. I have already had occasion to shew you that when the soft parts are divided they become reunited either by adhesion, which is called union by the first intention, or by the process of granulation and cicatrization, which is called union by the second intention. Now the union of the bones is not at all like that of the soft parts occurring by adhesion. We cannot assimilate the two occurrences. The union of a broken bone is more like that of the soft parts, by granulation and cicatrization—though not exactly like that. We observe, that when the broken ends of the bone are brought in contact, and maintained in apposition, that they slowly grow together—that is, that the bone becomes united at the part that has been broken. It has been said sometimes that this arises in consequence of effusion of blood into the interval of the broken ends of the bone, and the subsequent organization of the blood thus effused. This is an explanation that cannot be admitted, because the bone will unite even when there is no blood at all effused; and if blood be effused, as probably in most cases it is, it is absorbed before the union commences. In the progress of the union of a broken bone, we find that considerable swelling occurs in the situation of the fracture—and a swelling

which is rather firm to the feel. This is technically called *callus*. The word *callus* signifies originally merely a lump, and therefore the term simply denotes the circumstance of the swelling that occurs about a fracture. After the fracture has united, there is generally more or less of swelling and irregularity remaining in its neighbourhood; and that also is distinguished by the term *callus*. Hence this has become a kind of technical word to denote the effusion of substance by which the fracture of a bone is consolidated.

Heretofore it was supposed that the broken ends of bones became united together by the effusion into their interstices of a kind of viscid fluid, which gradually hardened, and became converted into the nature of bone. It was even supposed that particular articles of food, or particular articles of medicine, favoured this process. Some earthy matters were heretofore given, under the idea of promoting or assisting in the process of consolidation. Hence the term of *osteacolla* applied to a substance of that kind. When experiments came to be made on living animals, in order to investigate this process, it was soon found that the notion of the effusion of a fluid which gradually hardened and became consolidated, could not be maintained. Duhamel, who undertook to investigate the subject, supposed that it took place from certain changes which occurred in the periosteum. Others conceived that granulations were produced from the broken ends of the bone, and union thus effected. It seems to have been the opinion of Mr. Hunter that the union was effected in the way that I have already mentioned—by the effusion and coagulation of blood in the interval of the broken bone, and by its subsequent organization, corresponding to the views he entertained of the process of adhesion in the soft parts. More accurate investigation, however, has shewn that the process is not effected in any of these ways; and recently the attention of some of the French surgeons and physiologists has been directed to this point, and possibly the account they have given of the mode of union in fractured bones, is the most correct. Dupuytren has particularly investigated this subject, and he has described that when the two ends of a broken long bone are brought together, and maintained in apposition, they become in the first instance united by a swelling, and subsequent ossification of the soft parts immediately surrounding the broken ends of the bone. This forms a kind of case round the fracture, by which the broken ends of the bone are held together for a time; then the broken ends grow together, and become consolidated, so that the bone unites. Thus he makes a distinction between the first or provisional union, which is produced by the swelling and ossification of the surrounding soft parts,

and the ultimate or definitive union which is produced by the agglutination of the two broken ends themselves—calling the former *cal provisional*—the provisional callus; and the latter *cal definit*—the definitive callus.

According to the account he has given, it appears, in the first instance, that is, taking the period from the occurrence of the fracture to the end of about ten days, the periosteum, the cellular substance, the muscles, and the other soft parts immediately surrounding the broken bone, become swelled, and form a considerable tumor, which you can feel externally. All these parts enter into the composition of the swelling; the thickest part of the swelling is opposite to the situation of the fracture, and it is gradually lost in the natural surfaces of the bone in both directions. In the commencement, the tumor is somewhat reddish—that is, there is a determination of blood to it; but towards the latter part of the period I have mentioned—that is, towards the tenth day—this redness or discolouration is lost, and the swelling, when examined internally, has a whitish appearance. In the early part of this period you have, in fact, a mixture of coagulum and fluid blood. Blood is effused from the vessels that are broken in the fracture, and subsequently coagulates. Such is the state of the parts between the commencement and the end of the tenth day; and in this stage there is either a kind of viscid fluid between the ends of the broken bone, or something like a reddish granular substance produced from the extremities of the bone, forming a kind of spongy union between them—nothing at all osseous. In the second period, which extends from the tenth to the twentieth or twenty-first day after the fracture, the swelling that I have just mentioned becomes less in size—it becomes more limited to the immediate neighbourhood of the broken ends of the bone, but it is considerably firmer in its structure;—it begins to assume a fibrous, or a cartilaginous, or something of an osseous structure. During this second period, the fracture admits of motion—that is, the broken ends can be moved on each other; but no grating is produced by such motion—there is no crepitus. The third period extends from the twentieth or twenty-first, to the fortieth, fiftieth, or sixtieth day; and during this time the external swelling which I have just mentioned becomes ossified, and assumes a pretty firm state; the internal swelling of the medullary membrane becomes ossified in a similar manner, and in fact this ossification of the external and internal becomes firm enough to allow the patient to employ the broken bone. In the case of the thigh or the leg, the patient can now support the weight of his body on the bone; but yet, at the same time, the actual extremities of the fracture are not united—

they still remain connected together by the viscid fluid, or the red spongy substance that I have just mentioned, although the fracture at this time is sufficiently consolidated to enable the patient to use the limb—at all events with care. Yet the union is soft enough to allow of the fracture giving way in consequence of any external force or influence, or in consequence of too much weight being rested upon the limb. The fourth period extends from the fortieth, fiftieth, or sixtieth day, to the end of five or six months; and in that time the external swelling becomes completely and firmly ossified, and when you examine it externally, it seems as if the periosteum extended over the swelling to the sound part of the bone. It is firm and strong, and the medullary membrane is firmly ossified; at the same time the extremities of the bone, which hitherto have not been united, are found to be connected, so that you only see the separation, or rather, the situation in which they had been previously separated—as a faint line, when the fractured part is divided longitudinally with a saw. During the fifth period, extending from the fifth or sixth month to the end of about a year, this external provisional callus is entirely absorbed, and the union of the bone becomes so firm, that subsequently the bone will perhaps break more easily in any other situation than in that of the fracture. The provisional callus having served the purpose of keeping the ends of the bone together for a certain time, is entirely removed, and we see nothing more of it; while that part of the provisional callus which is produced by the medullary effusion is also absorbed, and the medullary membrane returns to its natural state.—[Mr. Lawrence illustrated this by exhibiting a long bone (the humerus) which had been fractured; where the ends had been kept in precise apposition, the structure of the bone was completely established.]

Some time ago I had a patient in this hospital, an elderly man, nearly 60 years of age, who had a compound fracture of the tibia, and he died very suddenly in the fourth month from the time of his admission. The fracture had proceeded favourably, and had united very well, so that he had been well enough to get up and walk about the ward. The limb was quite firm, and we considered the bone to be united;—he could use the limb freely. He died suddenly as I have said, and I had an opportunity of ascertaining the state of the tibia. When I laid this bare, it appeared sound externally; but when I had sawn out a part of the tibia (the back part), I was quite surprised to find that the ends of the bone moved freely, although I knew that the patient had walked before his death. I found the state of the bone exactly corresponding to the description I have now given you—namely, that



the fractured ends of the bone were literally not at all united, although four months had elapsed from the time that he met with the accident. They were connected by a soft reddish substance, but I could easily move them upon each other. But these bones were enveloped by a kind of external investment—a sort of ferrule (if I may use the expression) of osseous substance held them together.

Now you are aware that it sometimes happens that the ends of the broken bone are, in fact, not exactly connected with each other—they do not exactly join as they ought to do—yet the bone may be united. Under these circumstances, what Dupuytren has called *cal definiti*—the definitive callus—never takes place at all; the broken ends are only in contact by their sides, perhaps. We then find that the bones are united by what he calls the *cal provisionnel*, or provisional callus, which is permanent; and in this way a very firm union may take place.

[Mr. Lawrence here exhibited a specimen, and observed that the bones were riding or overlapping each other, and that the medullary cavity was not found to exist in such a case.]

The resources of nature are very extensive: in such a case, even where the ends of the bones do not come together, they become consolidated, so that the patient can use them. Here is a case [presenting the specimen] where the portions of the bone do not correspond to each other, but have become fixed in a lateral situation. I have seen instances where there has been an interval between the broken ends, and a cross bar has been thrown out between the two, so as to form a union (of the tibia, for instance) sufficient to support the body, although there was no direct union of the upper and lower bone.

It has been known that part of a bone has been broken off in its whole thickness, as in the case of a long bone, the fracture extending into the medullary cavity; it has been broken off, and actually turned round, so that the exterior part of the bone has been towards the medullary cavity, and it has united in that way. There is a specimen of that kind in the Hunterian Museum, where a piece has been detached and turned round, so that a part of the proper exterior surface of the bone has united towards the medullary cavity. This shews you that the bones have very extensive powers of repairing the injuries which they receive, and therefore you are not hastily to conclude, that because an extensive injury has been inflicted it will be necessary to remove the limb, on the supposition that nature is not sufficient to repair injuries, though they be really very considerable.

From this general view of the process by which a fracture is united, you will easily

deduce the practical rules that are to be observed in the management of such accidents. You must bring the broken ends of the bone together, and approximate them, bringing them as nearly as possible into their natural position, retaining them in that position, and keeping the limb quiet, that there may be no danger of their becoming separated. These are the general purposes that are to be followed in the treatment of fractures; but the circumstances of fractures are so various, that it is not sufficient for me to mention to you these general indications; it is necessary to enter somewhat more into detail.

Fractures differ, in the first place, in consequence of the description of bone which they implicate. You may have a fracture in a long, a broad, or a short bone. Now the observations that I have to make respecting the surgical treatment of fractures, apply almost entirely to those of the long bones. The short bones, such as those of the carpus or tarsus, are seldom the subjects of fracture; sometimes, indeed, the os calcis has been fractured, but it is a rare accident. The broad bones are more frequently fractured, yet the fractures of these admit of very little help from surgery, and they generally are much more important, in consequence of the mode in which they affect the parts contained in the cavities formed by such broad bones, than in reference to the fracture itself, as, for instance, in the cranium or pelvis. We cannot do much in these accidents—so far as the mere fracture goes—and thus our observations on fracture refer almost entirely to the long bones.

There is a considerable difference in respect to the nature of the injury and its extent, and the parts which may be involved in different cases. The fracture may affect the middle, compact, or solid part of the bone, or its spongy articular extremities. The direction of the fracture is very various. The bone may be fractured across—*transversely*; it may be broken in a slanting direction—*obliquely*; or it may be broken lengthways—*longitudinally*; but the latter—longitudinal fracture—is uncommon, and hardly takes place except, perhaps, in consequence of gun-shot injuries, where the fracture of a bone is accompanied with fissures or cracks, extending to a considerable distance: under such circumstances, indeed, nearly the whole length of a bone may be split up longitudinally. Partial longitudinal fracture, however, is more common, that is, where a fracture takes place in the lower articular portions either of the femur or the os brachii. The part which constitutes the condyles of both these bones, is occasionally broken longitudinally, the fracture in such cases extending into the joint—which is, of course, rather a serious complication, and with the simple division of the bone you

may have, under certain kinds of violence applied to them, a fissure or crack extending to a considerable distance.

A bone may be broken in one place, or in two places, or a certain part of a bone may be broken into several fragments. Hence the distinction of *single*, *double*, and *comminuted* fractures. You have the injury of bone occurring alone, or it may be accompanied with more or less considerable injury of the surrounding parts; there may be more or less extensive laceration or bruising of the muscles and other soft parts; indeed, there are few fractures in which there are not some of these injuries of the surrounding parts, and in a great number of these accidents such injuries constitute a very important part of the mischief. Fractures are not uncommonly attended with ecchymosis, that is, with laceration of some blood-vessel, and consequent effusion of its contents. This blood may be either diffused in the cellular texture generally, or a considerable quantity may be poured out in one spot:—or lastly, which is a more serious kind of injury, some considerable artery may be wounded, more particularly in the leg, where there are some large arteries lying in contact with the bones.

Fracture is not unfrequently accompanied with the division of the integuments and a protrusion of the broken bone through it,—a wound of the integument communicating with the fracture. This, in English, is called a *compound* fracture. We use the terms simple and compound as opposed to each other;—a simple fracture being a fracture in which there is no external wound connected with the fracture, whether the bone be broken in one or more places;—a compound fracture being one in which there is a wound of the external integuments connected with the broken bone. These terms are not employed exactly in the same way by the French writers. They use the word simple fracture to denote a case where the bone is broken in one place. *Fracture simple* is equivalent to our single fracture; what we call compound fracture they call *fracture compliquée*—complicated fracture, though this term does not answer to what we should understand by the expression, as there may be various other complications with a fracture besides its communicating with the external surface. Then the occurrence of fracture may be complicated with injury of a joint, that is, the fracture may be so seated as to extend into a joint; and there are some rare instances in which fracture has been accompanied with dislocation, though this of course is an uncommon combination, for the violence which produces the injury either causes one of these accidents or the other—seldom both. If it thrust the head of the bone out of the socket, it does not produce fracture, and *vice versa*; therefore, in general, the existence of fracture excludes altogether the idea of luxation, and of course

luxation leads us to suppose that there is no fracture. But there are cases where they are both present together. Some time ago I saw a medical man in whom dislocation of the humerus had occurred, with fracture close to the head of the bone; so that dislocation cannot be relied on as an absolute proof that there is no fracture.

Now, with respect to the *causes* of fracture, we find that bones may be broken by any violence directly or immediately applied; such as a severe blow, or the wheel of a carriage going over a limb, or any other immediate violence of that sort. But more commonly the bones are broken by the indirect application of force—that is, the bones are not broken by the application of violence directly to the point at which the fracture takes place; but a person falls to the ground, and the end of the bone comes to the ground, while the weight of the body rests upon the opposite extremity; and the bone being included between these two forces, gives way at the middle or weakest part—gives way, therefore, in a situation where no external force is applied to it. This is the way that bones are generally broken in consequence of falls.

There are certain causes of fracture which may be considered to be predisposing or remote; circumstances which favour the occurrence of fracture, when bones are placed in such situations as I have just mentioned. In the middle period of life, in which the osseous structure has the greatest degree of strength, such bones, *cæteris paribus*, are least liable to fracture. Fracture takes place more particularly in young and old subjects, where the osseous structure is less firm and possesses less power of resistance. In elderly persons the bones are more brittle than in the active and robust period of life; so that, on the application of considerable violence, fractures take place almost constantly in persons of a certain age. There are certain states of constitution which we cannot perhaps exactly define, which give a disposition to fracture, and bones break without our being able almost to account for the occurrence.

Now I had a patient in Bedlam, an elderly man, who had been there for a great number of years. His arm was broken by a slight cause applied to it; we could hardly tell how it happened; however the bone was united and did very well. Not above two years afterwards, it was found out by accident that his thigh was broken; he had not fallen, nor had any blow been given, and, in fact, after it had occurred, he contrived to walk to his cell. When he got there, he complained of his thigh, and when I examined him I found the thigh broken about the middle. In this instance, as in the preceding, the fracture was treated in the regular way, and it united very well.

There are certain morbid states of the constitution in which fractures take place under the application of a very slight degree of force, such as in healthy individuals would be totally inadequate to produce the effect. It is in this way that bones of cancerous patients have frequently been broken merely from moving in bed, or making some other slight exertion. In these instances we can see pretty well how it is that fracture takes place, for we find the bones of such individuals become considerably softer than natural; a great part of the earthy matter is removed, and perhaps cancerous structure formed in its place.

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## NERVOUS AFFECTIONS.

*To the Editor of the London Medical Gazette.*

SIR,

THE observations of Mr. Brodie upon nervous affections, as related in the Gazette for January 30, recalled to my recollection two somewhat curious cases bearing upon this subject; and should they appear to you to possess sufficient interest to communicate to the medical public, they are entirely at your service.

I remain, yours, &c..

R. R. ROBINSON, Surgeon.

Cooper's Row, Trinity-square,  
April, 1830.

CASE I.—R. Robey, æt. 45, November 24, 1829: a strong healthy-looking man, states, that he has, from 14 years of age, been subject to epileptic fits, some of greater, and others of less severity; some have subsided of themselves, others have yielded to leeches and blisters, and others have required V. S.; was seized with a fit on 22d, when from the urgency of the spasms he was obliged to be held by several persons. A small ulcer on the lower part of the right leg, which was bruised when in the fit, is very painful; veins of this leg varicose; right inguinal stands enlarged and tender; head-ache, thirst, skin hot, pulse quick, tongue coated, bowels open by salts.

Cal. gr. iij. Ant. Tart. gr.  $\frac{1}{2}$ . nocte.

Pulv. Rhei 3ss. c. P. Cinn. Co. gr. v. primo mane.

Solut. Mag. Sulph. 3iss. Ant. Tart. gr.  $\frac{1}{6}$ . sextis horis.

Cataplasm. panis ulceri.

25th, six P.M.—Was seized last night with violent shooting pain, commencing in the right foot, and extending from thence all the way up the leg to the groin, and from thence to the chest; it has continued ever since, more or less, and entirely prevents sleep; he is now in a state of great agony from spasm, which makes him call out and grind his teeth; almost all the muscles of the body in a great degree of tension; is constantly rolling about in bed till he becomes quite exhausted; some thirst, skin hot, pulse sharp, five motions.

Tr. Opii gr. xl. ex. Mist. Camph. 3j. foment. Cham. et cap. Papav.

Nine P.M.—Considerably easier; the least pressure on any part of the right leg immediately brings on the spasm; pain on pressing right hypochondrium; frequent sickness; skin warm, and very moist; pulse 96, wiry.

V.S. ad 3xx. (slight syncope.)  
Rep. Tr. Opii.

26th, twelve P.M.—Was easy until last night, at which time he slept for three hours; he then awoke in a violent state of spasm, which has continued at short intervals ever since; no motion; tongue white, moist; pulse regular, soft, 96; skin warm and moist; face flushed; no head-ache; crassamentum cupped, and deeply buffed; right ankle very much swelled and red; the redness also extends some way up the calf. Pressure, not only on the leg, but on the abdomen, brings on the spasm, in which most of the voluntary muscles, those of deglutition excepted, are implicated, and in a great degree of tension,—for a time all sensation is lost, but returns as the spasms and pain relax.

Cal. gr. v. P. Jalapæ 3ss. stat.  
Foment. et cataplasm. rep.

Seven P.M.—Continued in great agony until three P.M., but has since been calm and composed, except when he moves his limb, which instantly brings on the spasm; is now calm, breathes freely, muscles flaccid; pulse rather sharp, about 96 or 3; no thirst; skin warm and moist; five motions, dark brown; leg not painful.

Mist. Salinæ 3j. (Liq. Am. Acet. Mist. Camph.)

Tr. Hyoscyam. Liq. Ant. Tart. a. gttis. xv. 6tis horis.



27th.—Spasms at times occur, but are less frequent and severe; leg still inflamed, a puffiness on the outside, two inches above the ankle; no thirst, skin moist, tongue white, bowels open, pulse soft and slow.

Cal. gr. j. o. n. P. Rhei p. m.  
Mist. Salin. P. Dov. gr. viij. 6tis horis.

28th.—Slight spasms at times; pressure upon the limb painful, but inflammation is subsiding; no sleep in the night, but has dozed in the day; two motions; pulse soft, 96.

Perstet.

29th.—Some of the same pains and spasms in the right leg, especially when the poultice gets dry, but they do not extend up the body; no sleep; redness subsiding; less pain on pressure; several motions; tongue moist, but particularly white; no fever.

Repetantur Mist. et Catap. Omitt. Cal.  
Ol. Ricini 3iv. p. mane.

30th.—Some slight pain in right leg and left elbow last night; redness subsiding, but great pain upon pressure above the outer malleolus; bowels well open; tongue moist, but still white; night restless.

Perstet.

Dec. 2.—Pain recurred slightly last night, and seems worse every other night.

Quin. Sulph. gr. iij. Opii gr. j. ter die.

4th.—Pain and spasm returned last night nearly as severe as ever, darting up to the head, and pervading the whole body; pressure on any part intolerable. It began about eleven o'clock, and lasted until five A.M. to-day, alternating with hours of ease; a little puffiness over the outer malleolus, which has apparently a fluctuation, but the least pressure is so painful, that it was examined as lightly as possible; bowels well open, no fever, quite easy during the day.

Tr. Hyoscy. 3j. Liq. Am. Acet. 3ss. ex aqua Hordei ter die.

6th.—Pain returned last night, and lasted from ten P.M. till five A.M. this day, without intermission, during which time he was quite distracted, and the least pressure upon the abdomen, or indeed any part, increased it; more fluctuation to-day in the tumor over the malleolus externus, which was punc-

tured, and a small quantity of pus evacuated; the operation, however, brought on the spasm and pain, which were slightly relieved by strong pressure upon the abdominal muscles; he traced the pain from the outer malleolus along the outside of the leg, under the ham, and from thence up the back part of the thigh to the sciatic notch, and from thence to the head and fingers' ends. Bowels well open.

Repetantur Mistura et Cataplasmata.

8th.—Pain subsided about ten minutes after the operation, and he has been quite easy since; slept well; bowels regular; a slight healthy discharge from the wound.

Cerat simplex—Bandage.

12th.—No return of pain; wound healing up gradually; slight pain in the stomach from indigestion.

Pulv. Rhei 3ss. statim.

20th.—Pain and spasms have returned with great violence every night since last report, commencing sometimes at 5 P.M. sometimes at 4, and sometimes at 3 P.M. Inflammation around the wound increased, but is now subsiding, and he is easier to-day than he has been since the first attack; no fever; general health good.

Ol. Ricini 3iv. Tr. Opii gtts. x. statim.  
Ferri. Carb. 3j. 4a. quaq. horâ.  
Foment. rep.

30th.—The matter was discharged from the original sore on the 22d; the pain from that time gradually abated, and is now entirely gone. Slight fungous granulations in the wound, to which pressure has been lightly applied.

Jan. 10th, 1830.—The pressure produced pain; he therefore returned to the poultice: is now quite easy; pressure does not produce pain; swelling of ankle fast subsiding; general health remarkably good.

Perstet.

13th.—Some induration remains; wound quite healed; entirely free from pain since last report, and in very good health.

Feb. 1st.—Remains perfectly well.

REMARKS.—This case, though in some respects resembling the *epilepsia occasionalis* of Cullen, "ab irratione manifesta oriens, et ablata irratione

cessans," in others differs from that disease; and perhaps may, with propriety, be regarded as an inflammation of the neurilema of the whole nervous system, as indicated by the fever, the extreme degree of pain pervading the whole of the integuments of the body, increased on pressure, and the buffed and cupped appearance of the blood withdrawn from the arm, which latter state is allowed to shew itself most frequently in inflammation of the serous membranes, to which class the neurilema properly belongs.

I think also the cause which produced this excitement of the nervous system corroborates this opinion, for its appearance soon after the commencement of the inflammatory state of the ulcer, its intensity being proportioned to the severity of that inflammation, and its sudden cessation when that terminated, leave no doubt in my mind as to the excitement of the nervous system being attributable to the state of the ulcer. Whether the fit had any thing to do with the ulcer or the succeeding symptoms, I will leave others to determine.

The treatment did nothing more than abate the inflammatory action, and to a certain degree mitigate the pain: it did nothing towards arresting the disease in the nervous system. I believe, also, the puncture was rather premature, so that another time, were I to see a similar case, so great was the pain inflicted by the operation in this instance, that I would leave the opening of the abscess to nature.

CASE II.—April 11th, 1826.—J. Tierney, æt. 40, subject to piles, lumbago, and spasms of the abdominal muscles, since 1818; in 1824 he had an attack of paralysis of his right arm, the use of which he recovered in a month; the spasmodic twitchings, however, have increased greatly within the last few days; are not confined to the abdominal muscles, but extend to those of the chest and extremities. The muscles during the paroxysms, which are short but very frequent, are tense; the pain so great that he cannot refrain from calling out. He is constantly writhing in all directions in the bed; his breathing is short; pulse regular, quick, and sharp; tongue clean; skin moist, but hot; motions green.

V. S. ad 3xvij. Opii gr. ij. nocte.  
Ol. Ricini ʒj. primo mane.

12th.—Pains and spasms less severe, confined principally to the extremities, especially to the lower. Rested better; crassamentum of the blood drawn not buffy nor cupped, but the serum very yellow. Tongue clean; pulse softer; motions still green; skin warm and perspiring.

16th, six P.M.—Was quite easy till this morning, when, at 9 A.M. he was seized with pain and spasm in almost every muscle, and a state of opisthotonos. Deglutition perfect; slight headache; some bleeding from piles; tongue clean; pulse excited; one green motion.

Pulv. Emet. statim. Vesic. inter scapulas.  
Balneum tepidum.

16th, nine P.M.—Spasms less frequent and severe; vomited copiously a dusky green fluid, with particles, like sawdust, floating in it. Pulse 80, regular, softer. Tongue white, and rather dry; slight headache; two dusky brown motions; could not get a bath; has not applied the blister.

Cal. gr. iij. Opii gr. j. nocte.  
Ol. Ricini ʒss. p. m. Ves. app.

19th.—Was seized again, at 11 P.M. yesterday, with spasms as before, which continue, and render him exceedingly restless.

Liq. Opii Sed. gtts. xx. statim.  
Cal. gr. j. Opii gr. ij. Ext. Colocynth.  
gr. v. ter die.

20th.—Was lulled by the opium; went into the bath in the evening, but upon coming out the spasms returned as severely as ever, though not quite so frequently. The muscles principally affected are those of the lower extremities, and those on the sides of the chest; breathing during the paroxysms hurried; tongue dry and white; one motion; pulse regular.

Vesic. perpet. Rep. med.

21st.—Spasms continue very violent; severe pains in the course of the sciatic nerves; piles also very troublesome.

Hirud. xij. ano.  
Quin. Sulph. gr. ij. 6tis horis.

23d.—Leeches bled well: he afterwards went into the warm bath. Spasms both less frequent and less severe; bowels much relaxed; erysipelas in right leg and foot; no appetite; tongue brown and dry; pulse regular.

Cataplasma. panis. Pulv. Doveri gr. x. o. n.

25th.—Foot swollen, red, and in parts livid; phlyctenæ near the ankle; leg swollen, puffy, but not red; spasms and pains ceased; delirium; pulse low; bowels relaxed; tongue dry, brown; skin dry.

Catap. stimul. Opii gr. j. 6tis horis.  
Cinch. P. 5j. ex vino, frequenter.

28th.—Leg improving at the lower part, but more swollen, and portions of the skin and subjacent cellular tissue sloughing above; sleeps at times; is now sensible. Bowels regular; stools dark; appetite bad; takes chiefly wine and ale.

Opii gr. j. Quin. Sulph. gr. ij. 4tis horis.

May 1st.—Much stronger; inflammation nearly gone; sloughs separated; sinuses have been laid open to-day. Pulse regular; tongue brown, but moister; three motions; sleeps well.

Rep. med.

13th.—Convalescent; sores healed.

REMARKS.—I have seen this man several times since last report; and although he is much freer from the complaint, he at times experiences pain and spasms of the abdominal muscles and lower extremities, always worst in damp weather, and when the piles project and bleed; and, therefore, to the state of the hæmorrhoidal vessels may be ascribed the nervous excitement manifested.

The only things which materially relieved him were the application of leeches to the anus, and the appearance of erysipelatous inflammation of the leg, by which his life was endangered, and which was most probably attributable to the high state of excitement of the nerves of the leg: if so, it not only verifies Mr. Brodie's observation, that the tenderness of these nervous affections may be followed by increased vascularity, a slight degree of swelling and actual inflammation, but shews the possibility of its being followed by very active inflammation, such as will end in suppuration, abscess, ulcer, or mortification.

It is, perhaps, also worthy of note, that in both the cases I have related almost the only muscles not implicated in the spasm were those of deglutition.

I have lately seen another case of spasm, sensation of "knots" and pain in the abdominal muscles, with pain also darting towards the anterior superior spinous process of the ilium, and the

outer part of the thigh; affecting, probably, the nervus cutaneus externus, which was entirely removed by a diarrhœa. This has been stopped by kino and laudanum; but the old pain has since returned, though with less severity. This man was formerly subject to piles, which were suddenly checked, but have lately reappeared.

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## HOUR-GLASS CONTRACTION OF THE UTERUS.

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*To the Editor of the London Medical Gazette.*

SIR,

ON reading over Mr. Moss's case of spasmodic retention of the placenta, in the last number of your valuable Gazette, I am induced to offer a different opinion of the case to that which he has formed, and to explain, for the benefit of junior practitioners, what appears to me to have been the exact state of the uterus, under the circumstances he has described. I speak rather confidently, from having met with, in the course of an extensive practice, many similar cases, though not accompanied with the "traction" of the funis; an occurrence which I am disposed to consider as having had nothing to do in producing that state of the uterus.

Mr. Moss says, "after remaining a couple of hours, and finding no expulsive efforts made by the uterus, I passed my hand into it, as I imagined (my arm being introduced up the vagina to within three inches of the elbow), for the purpose of removing the contents; when I found a firm constriction in its centre, and a portion of the placenta hanging loosely below it."

From about two o'clock on Friday morning until twelve at night, opiates, for the purpose of allaying the spasms, were administered at intervals, and the hand thrice introduced for the purpose of endeavouring to extract the placenta; but all without effect, the spasm continuing as rigid as ever.

Being thus foiled in his attempts to extract the placenta, Mr. Moss was now led to press his hand on the abdomen, and found, to his surprise, from the shape and situation of the uterus, that his fingers had never been within it at

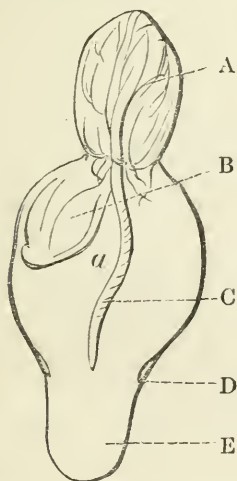


all, but that its mouth was firmly closed by the placenta, and that the uterus had receded so high in the abdomen, thereby elongating the vagina to so great an extent, as led him to suppose he had found his way into the middle of the organ, when in truth he had but arrived at the portal.

Having now discovered what he considered to be the real state of the case, by well-directed efforts he succeeded, with very strong exertions, in relaxing the spasm so as to admit his hand, and immediately withdrew the placenta.

In the course of practice, as I have above stated, I believe I have met with many similar cases to that described by Mr. Moss; indeed I am disposed to think it is one of the most common states of the uterus under which the placenta is found to be retained, when attached to its fundus.

To convey a more exact idea of the state of contraction than I can do by words, I will endeavour, though but a poor draftsman, to trace the form of the uterus with my pen, thus—



- A, fundus uteri contracted over the placenta.
- B, portion of placenta hanging below the contracted fundus.
- C, the cord.
- D, os uteri still obliterated.
- E, vagina.

The contracted fundus, under these circumstances, may always be felt like

a ball just below the umbilicus; and when that is the case, it appears to me needless to observe that the arm could not very well be introduced into the vagina to within three inches of the elbow, without entering the cavity of the uterus.

When this kind of contraction occurs, the stimulus of the hand within the lower part of the uterus will frequently, in a short time, produce a general and regular contraction, and expel the placenta; which effect will be much promoted by making a feint to withdraw the hand, after moving it about for a little; when, if the uterus contract, the lower portion of the placenta may be laid hold of, and it will come away with the hand. Should this favourable effect not be produced by the stimulus of the hand alone, it ought to be gently insinuated, in the form of a cone, into the contracted part, which I have never found fail to bring on a general contraction; but this last mode of proceeding will seldom be required.

I should say that this is not the same state of uterus usually called the hour-glass contraction, but a much more common occurrence. I believe the hour-glass contraction to be rare; yet I am persuaded there are but few practitioners of extensive experience who have not met with such cases.

I trust Mr. Moss will not consider that I mean this as a personal attack upon him, as I give him much merit for manfully bringing the case before the profession.

JAMES HOLBROOK, M.D.

Cheltenham, 6th May, 1830.

*To the Editor of the London Medical Gazette.*

SIR,

IN your useful journal of last Saturday I read an interesting letter from Mr. Moss, of Eton, on what is commonly called "hour-glass contraction of the uterus." When this state of the organ occurs, it generally follows the expulsion of the fœtus, and I never heard of any one who had met with it previously to that event. In December last, however, I had a very complete case of the latter kind; and it appears to me that

a brief account of its leading features may not be unworthy of publication.

The patient is a healthy woman, 27 years of age, and had been delivered of twins about two years before. On the morning of the 19th, at ten o'clock, having gone the full period of uterogestation, she was attacked with diarrhœa and severe abdominal pains. At six in the morning of the 20th I first saw her. As the above symptoms then continued unabated, and without any signs of labour, I gave her some opium and left her. The diarrhœa and abdominal pains were soon relieved, and shortly after ten o'clock were followed by pains more indicative of uterine action.

At three p.m. I found the os uteri a good deal dilated, and the presentation natural; but the uterine efforts were infrequent, weak, and very irregular. The abdomen was excessively distended, and it was evident, from the outline of the uterus, that its fibres were not acting at all in a regular manner. The patient being much in want of rest, and complaining of acute abdominal pain, I gave her 25 drops of laudanum, and recommended perfect quietude. Soon after five o'clock the pains indicated that the uterus was disposed to act more vigorously; but in a short time its efforts once more became weak and irregular. She, however, obtained a trifling degree of sleep, and the labour appeared slowly to advance.

At five in the morning she complained of severe pain in the abdomen, and on examining its parietes, a striking change had taken place in the figure of the uterus. It now bore a very perfect resemblance to the shape of an hour-glass, being divided into two nearly equal portions, with a narrow neck between them. The upper half, corresponding to the fundus, was completely pyriform; the lower was more of an oblong shape, from the close contraction of its fibres round the fœtus. The hardness and equality of size in both portions of the uterus, led me to conclude that each contained a distinct fœtus. At eight o'clock there was no material change. I left her for three-quarters of an hour, hoping that a more promising state of things would occur about ten o'clock. On my return, I was much pleased to find that the uterine pains had completely superseded the abdominal; that they were increas-

ing in efficacy, and that the labour was now going on as fast as could be expected. A quarter before ten the fœtus was expelled; the uterine tumor gradually subsided, and in a quarter of an hour the placenta was extracted without difficulty or hæmorrhage.

In her former labour, a period of 36 hours elapsed between the birth of the first child and that of the second; and so indisposed was the uterus to act, that it became necessary to rupture the membranes.

An irritable state of the schneiderian membrane has been long acknowledged to indicate a corresponding state of irritation in the intestines; but I am not aware that physiologists have ever considered the above membrane to have any direct sympathy with the uterus, either in health or disease. A case or two has, however, occurred to me, which would seem to warrant the conclusion that such a connexion does sometimes exist in diseases of the uterus.

In the year 1828 I had occasion to replace an inverted uterus. The patient was 51 years of age, and had long been subject to profuse hæmorrhage, severe pain, and distressing sense of weight in the uterine region; whenever these symptoms had recurred, she had been seized with most extraordinary fits of sneezing; this act of sternutation was accompanied with so loud a noise, that the patient could be heard at a very considerable distance. The complete inversion of the organ was at last produced by one of these unusual fits of sneezing. By replacing the inverted part, and making her wear Lawrie's prolapsus bandage, she has been free from any return of the complaint; her health also is restored, and (what is extraordinary) she has never, to this day, had a single fit of violent sneezing.

Had the above affection of the schneiderian membrane been produced by catarrhal inflammation, or intestinal irritation, it would not have been removed by merely placing the uterus "in situ."

Another woman, with a strong constitutional predisposition to hysteria, has for two years been the subject of what Dr. Farre calls "an hysterical condition of the liver." She had, however, become much better, when, in March last, she was alarmed by a report that the chimney of her house was on fire;

she was seized at once with an hysteric paroxysm; this was followed by violent sternutation; in a quarter of an hour the hysteric symptoms recurred, and were in their turn succeeded by the sneezing. This continued, almost without intermission, till two o'clock the following morning; at ten o'clock the same evening, however, I saw her. I found that she had then the globus hystericus, and many other characteristics of hysteria; I found also that she had not been exposed to the usual causes of catarrh; I therefore referred the fits of sternutation to an hysterical origin. I administered a pretty large opiate, and gave her warm water in great quantities: the affection was but little relieved by it. The fits of sneezing were more severe than any I had ever witnessed, and as the head was very painful, the eyes suffused, and the senses rather wandering, I took away 20 ounces of blood from the arm. I then left her, convinced that I had done all that her case would admit of for the present. The sneezing very considerably abated after two o'clock; it continued, however, at intervals, for 36 hours; after that she had great pain in the hepatic region, with copious morbid secretions from that organ and the stomach; these have, however, yielded to the usual remedies, and she may now be said to be in tolerably good health.

I have also seen, once or twice, an irritable state of the impregnated uterus, accompanied by sneezing, itching, pain, and other unpleasant affections of the schneiderian membrane. These cases have convinced me that a sympathy does sometimes exist in disease between the uterus and the mucous membrane of the nostrils; should they lead others to the same conclusion, their publication may not be altogether useless.

I have the honour to be, sir,

Your obedient humble servant,

WILLIAM LOTT.

Bromley, Kent, May 8th, 1830.

#### TORSION OF ARTERIES.

*To the Editor of the London Medical Gazette.*

SIR,

HAVING had an opportunity, last winter, of attending the lectures given upon  
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surgery by M. Amussat, in the University of Paris, my attention was particularly attracted by that part of them which embraced the subject of torsion or twisting of the extremities of arteries, for the purpose of stopping hæmorrhage; and it having appeared to me that it might be found useful in military practice, I have been induced to throw together the following cursory remarks upon the subject.

M. Amussat observed, that when the extremity of a bleeding artery of an animal is twisted with a pair of forceps to a certain degree, so as to stretch but not to lacerate it, the effusion of blood is arrested, and no recurrence of hæmorrhage takes place.

Upon the discovery of this fact, he proceeded to investigate the causes and means by which he might satisfactorily explain so unexpected a result; and he found that the torsion, although in a different manner, effected nearly the same object as a ligature—namely, the division of the mucous coat of the artery. This similarity of effect seemed the more extraordinary, as the operations differed very materially from each other in their manner of performance, and no such result could, *à priori*, have been expected.

In seeking for an explanation of this circumstance, M. Amussat remarked, that when an artery in a state of extension is cut across, the mucous coat will be found to protrude beyond the extremities of the two other coats, which, together with itself, compose the parietes of the artery, after they have contracted into their ordinary length; from which he drew the following conclusions.

First, that the cellular coat of an artery must possess considerable elasticity. Secondly, the muscular coat, from its being united with the former, accompanies it in its various motions. Thirdly, the mucous coat, from its little connexion with the two others, being united to them only by some slight cellular membrane, does not contract along with them to its ordinary length, but possessing very little elasticity, it continues somewhat extended beyond the divided extremities of the other two. It is also of great importance to observe, that as the mucous coat has very little elastic capability, it of course cannot be extended to such a



degree as either of the others, without being ruptured.

The operation of torsion is performed in the following manner:—The extremity of the bleeding artery is laid hold of with one pair of forceps, which must have a slide upon them, so as to keep them closed when applied to the artery; another pair is to be fixed on the artery about two-eighths of an inch above the former, which is now to be twisted three complete turns, so as to twist the artery in a corresponding degree; while the other forceps holds the artery firm, and confines the effects of the torsion to the space included between them. The operation is thus concluded, and the forceps being withdrawn, a twisted knot remains upon the artery, which, by the above operation, has been forcibly extended, and in consequence, the mucous coat, from its elasticity, has been torn across, and the current of the blood rushing against the detached portion, causes it to be reflected, and to form a sort of plug in the mouth of the artery, which has proved sufficient to resist the impetus of the blood. Indeed, I have seen the radial artery, when twisted on the dead body, bear a very considerable force applied to it by injecting water.

The foregoing are some of the principal remarks relating to the operation, in addition to which it may be observed, that if future experience should confirm its efficiency, and it should be adopted in practice, there are many advantages it will be found to possess over the ligature, which is now the chief resource surgeons depend on for the effectual arrest of hæmorrhage; and more particularly to the military surgeon it must be extremely useful, as it is very much adapted to casualties, which frequently occur in his peculiar practice, from the facility with which it is performed by one operator, its obviating the irritation produced by the ligature acting as a foreign body, and its little liability to accident, from rough or incautious treatment, in the removal of the patient from place to place.

WM. CAMPBELL ROBERTSON,  
Hospital Assistant.

May 4, 1830.

## ANALYSES & NOTICES OF BOOKS.

“ L'Auteur se tue à allonger ce que le lecteur se tue à abrégé.”—D'ALEMBERT.

### *Analysis of the works of Dr. S. Smith and Dr. Tweedie on Fever.*

[Continued from page 240.]

#### ART. II.—PATHOLOGY OF FEVER.

THIS chapter commences by some judicious observations on the necessity of “a comparison of the symptoms, as previously observed, with the state of the organs as subsequently ascertained;”—“and by comparing, in all cases, the morbid symptoms with the altered states, we acquire in the end the power of ascertaining, with a high degree of probability, the presence of an event which we cannot see, by the presence of its sign which we can see.”

“The pathology of fever comprehends the morbid changes that take place in the solids and the fluids of the body.” “It is probable that the changes in the fluids are wholly dependent upon those which take place in the solids.” To this last remark we do not subscribe, and we are disappointed in not finding any evidence in support of the probability which Dr. S. advances. Whether the blood is the first part operated on by the poison of fever, or whether the nervous system is first influenced, and the blood affected through the medium of this system, it is of little consequence here to discuss; but certain it is, that the peculiar pathological changes discovered in the solids after death, take place in the course of the disease;—many of them, we believe, but a short time before dissolution, and are more connected with and dependant upon this approaching event than upon the actions going on in the early stages of the fever. There are few things we should receive with more caution than accounts of morbid changes, convinced as we are that but few persons report them accurately. The evidences of dissection are often doubtful even to the experienced morbid anatomist; and we have no authority which directs us clearly what construction to put on certain appearances. Thus, one person seeing a part injected with blood will contend that this alone is evidence of inflammation; as will another, who sees a serous effusion between the mem-

branes of the brain; while in the one case the effusion may be the result of congestion, and in the other the vascularity may be the result of gravitation, or languid capillary circulation, for some short period before dissolution. Mere vascularity is no proof of inflammation. We remember the late Dr. Armstrong being present at an inspection in which he was interested, and the moment he saw the bronchi slit open, and the lining membrane red, he pronounced it to be inflammation. There is nothing more deceptive, nothing more difficult to judge of, than the appearance of the bronchial membrane, a highly vascular and red state of it being produced by many causes foreign to inflammation, as by asphyxia, impeded transmission of blood through the lungs, from disease of the heart, &c.; and therefore the reports of a dissection should be a minutely correct account of the appearances, as vascularity, consolidations, &c.; and not that this organ was inflamed, and that part inflamed, because we have then to depend on the reporter's judgment, which is apt to be defective.

The same order is observed in treating of the pathology, as in the other parts of the work, namely: first, the morbid appearances in the head; next, in the chest; and, lastly, in the abdomen.

*Morbid appearances in the Head.*—"The arachnoid," says our author, "is seldom or never in a healthy condition, being more vascular, or thickened, or opaque, and milky; and it adheres very often to the dura mater, particularly at the edges of the hemispheres, or along the course of the longitudinal sinus. To the pia mater the arachnoid is also very often adherent at several points! Vascularity of the membranes and brain in different degrees, with some variety as to the firmer or softer condition of the brain." An accumulation of fluid in the ventricles is more common, as reported by our author, than we have been accustomed to meet with: it is still more common to find it in excess between the membranes, often between the dura mater and arachnoid, (which we have never seen almost always between the arachnoid and pia mater. The author speaks also of flakes of lymph and pus beneath the membranes, which may, perhaps, be found where some peculiarity, as a blow, had occurred; but in

fever cases such appearances it has not happened to us to witness. We suspect our author's knowledge of morbid anatomy has been derived almost entirely from the Fever Hospital, or he would not speak of the adhesion of the arachnoid to the dura mater along the course of the longitudinal sinus as the product of a cerebral affection in fever, it being a natural state; but inflammation is always before the Doctor's eyes. Need we remind him, also, that the arachnoid is adherent to the pia mater throughout by a rare cellular tissue, in which run the vessels that go to and from the brain.

*Morbid appearances in the Thorax.*—The mucous membrane of the bronchi is the most frequently diseased, and its disease, says our author, "is specific and uniform." "It consists of preternatural redness," and its peculiar character is the being uniformly and strikingly darker than in ordinary inflammation, and darker as the bronchi diminish, which "is indicative, not only of increase of vascularity, but of alteration of its structure." Now all these appearances have nothing specific about them. Had Dr. S. been in the habit of examining this membrane under other circumstances he would have found precisely the same condition. When, in addition to vascularity, a muco-purulent secretion is found, then there can be no doubt of inflammation having existed, but without this proof the vascularity goes for nothing: and as to the darker state of the membrane in the smaller bronchi being indicative of increase in its vascularity, and alteration of its structure, we take leave to remark to the Doctor that this is deceptive, the darker colour being the deep colour of the congested lung seen through the more delicate structure of the small bronchi; and as to thickening, it can only arise from a chronic bronchitis. Thickening of this dense and firmly bound down membrane is very rare, indeed of any membrane, the tumefaction, in the case of mucous membranes, being more generally from deposition in the sub-tissue than from thickening of the membrane itself, which its natural structure scarcely admits of.

*Morbid appearances in the Abdomen.*—These, as our author justly observes, are more particularly met with in the ileum and cæcum, with elevation of the mucous membrane, vascularity, ulceration, and perforation of the intestine;

which have been so very accurately described by many authors as to render a repetition here unnecessary. The author's account of the changes in the membrane is very short; and his remarks on the morbid state of the mucous glands are not quite consistent with their anatomical structure. The spleen is said to be generally soft, and the pancreas frequently hard.

*Cases.*—We now come to the cases, a formidable phalanx, reaching the number 115. They are generally inappropriate, and form a most extraordinary subject for criticism: we are amazed they should have been allowed to issue from the press in their present imperfect state. They are detailed in the objectionable form of daily reports, and at the same time so imperfectly that it is not possible to draw any conclusion from them. In some the symptoms referring to a particular organ are mentioned to the exclusion of others; of none is there any early history; and to very few is the treatment added, and where it is noticed it refers perhaps only to the blood-letting, an account of the medicines employed being now and then added as a matter of accident apparently. Taken collectively the detail of the cases is very unsatisfactory, affording the reader no means of judging whether some very sudden and unaccountable changes should be attributed to the treatment or to the disease. All cases that enter the hospital appear to be considered as fever by Dr. S. and he has put them down in his book indiscriminately: for instance, we are at a loss to discover the symptoms of the common continued fever in many, the cases being evidently old disease, which was fast conducting its victim to the grave. Thus a vast number of them present all kinds of morbid appearances, which must have modified in a very decided manner those which are peculiar to fever; and our author leaves his reader in the dark as to whether these organic lesions are to be considered as having taken place during the fever, or whether as having existed before; nor can we determine what are his own opinions, though from the tenor of his language he would seem to think that all the organic changes happened during the course of the fever. On this subject we ourselves have no doubt: many of the cases are nothing more nor less than old lesions, or old diseases, still going on, as phthisis, on which fever in some instances has

supervened; and all practical men know that when such happens patients recover with difficulty under skilful treatment, and sink inevitably if active measures are employed. We should like to know the whole treatment of this host of fatal cases, for if the Doctor has attacked them, lancet in hand, there will be no hesitation in accounting for the mortality. We have not leisure to comment on these cases in detail, and, indeed, we should be sorry to undertake the task, for we feel that our patience would forsake us, and we should be led into remarks which we had rather spare our author and ourselves; but we must give a few specimens, in corroboration of the general opinion we have expressed.

We have already spoken of the case of poor Sullivan, than which a more exquisite example cannot be adduced.

The case 9 which is ranked under "cerebral cases," is an instance of death from *intussusception*. The patient was admitted on the eighth day of *fever*; attack commenced with *violent pain in the bowels*, in addition to the common symptoms. *Epigastre still extremely tender; tongue red, clean, moist; no stool for six days; no pain of head or chest; pulse 99; died on the 10th; and on dissection there was found "eight inches of the jejunum intussuscepted, and the furthest extremity of the intussuscepted part mortified."* The membranes and substance of the brain highly vascular; no effusion. What, we would ask, has this case to do with fever? The tongue was moist, and there was no pain of head, no cerebral symptoms; and yet this case is advanced as one of *cerebral affection*, merely because *after death* the brain was found vascular.

Case 25, age 50, admitted on 4th day of disease; has been in a state of intoxication for *several days* past. Died on the 5th. What could this be but intoxication?

Case 46.—On dissection there was discovered tubercles in the lungs, softened, and in a state of suppuration; that is, in a state of phthisis; and, in addition, "the sigmoid flexure of the colon contracted into a small white cord, of very narrow calibre, (a stricture?) the superior extremity of which was blocked up by a large scybula, and beyond it there was a great accumulation of fæces." Here is a case of phthisis, in conjunction with a permanent and complete obstruction of the colon, set down



under *cerebral affections* because there was an injected state of the membranes, with bloody points, and firm brain, and serum in the ventricles. In the history no allusion is made to the chest or abdomen, notwithstanding the disease that existed in both. It is said she lay senseless and delirious when admitted, and died on the sixth day. We are at a loss to discover any relation between this case and the common continued fever. If the Doctor concludes all cases to be cerebral affections in which, after death, there is found effusion under the arachnoid, or in the ventricles, or bloody points, or various consistence of the brain, then we could furnish him with enough to fill a quarto volume; for scarcely is there any instance of lingering death from organic disease of the chest or abdomen, in which one or other of the above appearances will not be found. Will our author be indebted to us for the information, that effusion under the arachnoid is exceedingly common where no affection of the head has existed, depending simply on the peculiarity of the circulation within the cranium, acted upon by mechanical obstruction in the heart or lungs? Will he be indebted to us for informing him, also, that it is common for persons dying with phthisis to be seized a few days before dissolution with heaviness and stupor, ending in delirium, and coma, and effusion into the ventricles? Yet such a case, if admitted into the Fever Hospital, is accounted a case of fever, with cerebral affection.

Case 50 is an example of extensive ossification of the falciform process of the dura mater, with a complete disorganization of the cerebellum: the patient moribund when admitted. What business this case has in a treatise on fever, we know not. The Doctor, surely, has not seen disease any where but in the Fever Hospital, or he would have discovered that in the last days of patients sinking under organic disease, the sensorium is apt to be disturbed, the eye to lose its lustre, and the tongue to grow dry; and are these patients to be considered as dying from fever, and the morbid appearances to be brought forward as illustrative of the effects of fever? If so, then the majority of cases dying in hospitals must be considered as fever: it is inconceivable.

We are unwilling to fatigue our readers by further comments on this strange assemblage of cases, but we must trespass

on their patience to introduce one more. This is No. 8, given as an example of synochus gravior, with thoracic affection. The patient, Potter, was admitted on the fifteenth day of fever; had been affected with severe pain of the head, and giddiness. On admission the pain in the head was nearly gone, but there remained vertigo, indistinctness of mind, with little or no sleep; indeed, all the symptoms referred to the brain, and there was "no indication of pectoral affection." On the 24th day the report states "no change observable until this day; no indication of thoracic affection had hitherto been apparent; but on the morning of the twenty-sixth day of fever dyspnoea came on, with some soreness of the throat, and he expired in the afternoon. On dissection the *cerebral organs* were found *healthy*; the mucous membrane of the bronchi of dark red colour; bronchial glands enlarged; *pleura of right side generally adherent*; *substance of lungs consolidated*; *pericardium contained four ounces of serum*. All these lesions of the chest were beyond doubt old thoracic affections, except the bronchial membrane; and will any pathologist venture to say that such extensive lesion can exist without any indication of pectoral affection? Has the Doctor studied Laennec? This case is adduced as one of thoracic affection, in which there were no signs; and yet, in a former part of the work, he says "the signs of their derangement are never absent, though less obtrusive." This case of Potter, too, is introduced by the following remarks: "but while sufficiently intense (*viz.* the thoracic affection) to destroy the structure of the organs in which it has its seat, yet it sometimes gives no indication of its presence, or none until the approach of death. In these cases *the cerebral affection is still more intense* than the thoracic; and the manifestation of the symptoms proper to the lung is prevented by the predominance of disease in the brain. Of this the following case affords a striking example." This is the case of Potter, above related, which, according to the author's own statement, is one of intense thoracic affection, with a still more intense cerebral affection. And what does dissection disclose this *still more intense cerebral affection* to be? Why nothing at all: the cerebral organs were found *healthy*. After this, what reliance can be placed on the cerebral indications specified by

our author? We are curious to know the treatment pursued in this case, but it is, as usual, omitted.

The pathology of the fluids, according to Dr. S., is scarcely at all known, and can only be attained by chemical investigation. He therefore has paid no regard to the physical characters of the blood, and makes no allusion to them in any part of his work; at which we are somewhat surprised. But it seems, from an observation in the early part of his treatise, that he was determined to reject all evidence of this kind. "The blood *may* be diseased in fever; but if it be so, these writers do not *know* it, or at least they do not adduce any evidence that they are in possession of such knowledge: they do not appear so much as to have questioned chemistry," p. 32. The writers alluded to, are those who attribute the essence of fever to a morbid condition of the blood. When making this assertion, was Dr. S. ignorant that these writers had advanced evidence of the altered state of the blood, derived from its physical characters?—and if not ignorant of these facts, why assert that they adduce no evidence? It is painful to us to repeat that this is in keeping with the general principle of the book. He acknowledges, with much propriety, that the pathology of the solids in fever has acquired a high degree of perfection;—and how? Not by chemistry, but by an account of the physical changes in these solids. And are not physical changes in the fluids to be regarded? Has it not occurred to Dr. S. in his dissections, to notice "the dissolved state" of the blood; the absence of coagula, and of fibrinous concretions; the thin fluid condition, like muddy claret; the frequent bloody exudations between the membranes of the brain; all shewing peculiar and decided changes? Are not these altered physical properties as manifest as the altered physical properties in the solids? Certainly they are; but prejudice turns away the eye.

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#### BIOGRAPHICAL NOTICE OF SOEMMERING.

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THIS distinguished anatomist and physiologist died at Frankfort, March 2d, in the seventy-sixth year of his age.

From the character of his writings, and the solid basis of his reputation, Soemmering may be looked upon as one of the fathers of science. To the Germans, indeed, he appeared in the light of a contemporary and fellow labourer; but to us, who have only known him in his works, he seems rather to have belonged to another age. We associate his idea with that of Albinus, with whom he possessed so much in common.

Samuel Thomas Von Soemmering was born at Thorn, the 25th of January, 1755. He received the degree of Doctor at the University of Gottingen, in April 1778, and from that period began to establish in Germany that reputation for science which continued to increase with his works. The inaugural dissertation of Soemmering was entitled, *Dissertatio de basi Encephali et Originibus Nervorum Cranio Egreduentium*. Already, in this first and important work, appeared that admirable activity of investigation, and astonishing power of invention, which always characterized the talent of Soemmering. In 1779 he published a volume, in quarto, on the Functions of the Lymphatic System in Health and Disease, and on the application to be made of such knowledge to the purposes of practical medicine.

About this period, so fruitful in moral and political discussions, many philosophers, and among others Raynal and Condorcet, were wont to plead the cause of the negroes, whose emancipation they demanded in vehement and systematic declamations. Attention was directed to this question from every quarter, and it was on this occasion that Soemmering published his Treatise on the Physical Differences which distinguish the Negro from the European. The first edition of this work was published at Mayence, in 1784, and was followed by another, which appeared at Frankfort, in 1785. In the same year our author produced a Dissertation on the small Calculi which are found in the Pineal Gland and its immediate vicinity. Always interested about the brain, Soemmering published a work on the Decussation of the Optic Nerves, and, in 1788, one on the Brain and Spinal Marrow. In the interval between these two publications, he composed a Memoir on Crises and Critical Derangements. Another, in 1788, made much noise in Germany and France, perhaps chiefly owing to the nature of the sub-

ject : it was upon the pernicious Effects of Corsets. The numerous discoveries which he had made on the structure of the brain were only known to the Savans, but no sooner did he write about stays than all Europe became familiar with his name!

The cabinet of Cassel contained a magnificent collection of monsters. Soemmering studied with care all the curious examples which were there collated, and, in a treatise on the subject, he described the singular cases which he had remarked in this museum. Even here he contrived to be original, in a description which appeared little calculated for the display of talent. The most able part of these observations is that which relates to acephalous and polycephalous monsters. In 1791 appeared a work on the Cure of Calculus ; and in 1795 he composed, in conjunction with T. Wenzel, a very interesting Dissertation on the Bones of Gouty Persons.

It was maintained by some, that fracture of the vertebræ was always mortal : Soemmering combated this opinion ; and, in a work which appeared in 1793, he proved, by facts and reasoning thereupon, that even in the cases where chronic disease of the vertebræ has produced their entire destruction, a chance of safety may remain.

We have not yet spoken of one of the works of Soemmering which has obtained the greatest success, and not without cause : it is his *Manual of the Structure of the Human Body*. A great number of editions, published at different times, attest the merit of the work. In some places, indeed, where the art of multiplying editions has become an integral part of literary merit, this would have been no decisive proof ; but in Germany, where they do not recompose a book till the former edition has been sold, the repetition of the publication generally shews that the work is meritorious. The one in question is remarkable for the extreme fidelity of the descriptions, as well as for the number and variety of the facts which it contains. Some parts deserve higher commendation ; such are the osteology and the description of the brain and nerves. The last, indeed, was always a favourite subject with Soemmering, and among his later works upon it was one entitled, "On the Organ of the Soul." In this he maintains an opinion which has not the merit

of novelty, nor the solidity of his general doctrines ; he holds, namely, that the soul has its seat in the humidity which, during life, lubricates the ventricles of the brain. In 1811 he gave an account of some interesting researches regarding the fluid in the nerves, and on its uses and connexion with the nutrition of these organs in the healthy and diseased conditions. Nor must we omit to mention, in relation to this part of the subject, his tables of the base of the brain, in which are represented with great beauty, and we believe with extreme correctness, the principal differences which exist between the encephalon in man and the lower animals.

The Society of Gottingen had published a programme on the causes and prevention of hernia. Soemmering replied to this in a treatise on Umbilical and Inguinal Ruptures. A singular accident attracted public attention to this work : the author had advanced various propositions regarding the effects of high breeches and hot beverages, on the production of hernia. There soon appeared an anonymous criticism on the doctrines advanced by Soemmering, the indecency of which was its most remarkable peculiarity. Several other works on Hernia appeared at different times from the pen and pencil of Soemmering. In the last of these he advanced the opinion now generally adopted, that umbilical hernia never forms in adults through the umbilical cicatrix itself, but in the linea alba in its neighbourhood. The works of Soemmering almost defy enumeration in a notice such as this, but we must add to the list his plates of the Ear, the Eye, and Organs of Voice, and those of the Human Embryo. It is this last which has led the way to the important researches in embryology which have since been carried on by the Germans—Baer, Meckel, Tiedemann, Carus, and others. Soemmering, however, was the first who gave an exact figure of the embryo, and of the successive gradations of its development from the fourth week after conception.

The last work of this illustrious author was on the Fatal Diseases of the Bladder in Old Persons, the first edition of which appeared in 1809, and a second in 1822, being, as we believe, the close of Soemmering's professional writings.

In 1828, Soemmering attained the fiftieth year of his doctorate. It is a



general usage in Germany to celebrate a kind of jubilee in honour of those who have grown old in scientific labours and fame. On this occasion all the most distinguished men in Germany hastened to render homage to the aged philosopher.—*Journal Hebdom.*

### ROYAL INSTITUTION,

Friday, May 14, 1830.

WHITLOCK NICHOLL, M.D. VICE-PRESIDENT, IN THE CHAIR.

#### *Lithotrity.*

“OBSERVATIONS on Lithotrity, illustrated by experiments; with reference more especially to the improvements introduced by Gruithuisen, Civiale, Le Roy, and Heurteloup.”

MR. GILBERT BURNETT introduced this subject by stating that as, even in France, the country where most had been done, and the chief improvements made, much uncertainty prevailed as to the appropriation of the several stages of discovery which have led to the successive amelioration and almost to the perfection of the lithotritic process, it would be thankless presumption to moot the question here; and hence it should rather be his more grateful task to shew how much modern surgery stands indebted to Gruithuisen, Civiale, Le Roy, and Heurteloup, as colleagues and fellow-labourers in the common cause of humanity, than as rivals contending for that which, as a whole, sheds glory on the illustrious group; but which, if divided, would be imperfect, and add little to the reputation of either.

The elements of lithotrity, like most modern discoveries, may be found scattered through centuries, and some of them belong to very early time; for so long as men have been intolerant of pain, so long must they have attempted to mitigate or remove the tortures of that most dreadful malady, stone in the urinary bladder. The dilatation of the urethra, and the possibility of passing an instrument, *especially a straight one*, through it into the bladder; the seizing and reducing the stone to fragments or to powder, so that it might pass through the enlarged canal; and the injection of fluid into the bladder, by which its sides might be kept away from the in-

strument during the operation, and by which the detritus might be subsequently washed out; these are the three important elements in the process of lithotrity. The ignorance of the ancients of human anatomy, would seem to have led them nearer to one of these points than the comparative proficiency of the moderns; for they, unconscious of the curves of the urethra, used *straight sounds*—a practice which has been generally condemned, and even the possibility of which has, with some few exceptions, been, till very lately, most strenuously denied. The greatly curved sounds and catheters have, however, for many years been lessening their sweeps; and a straight rod, with a quadrant curve at its extreme, is certainly the most efficient for investigating the contents of the bladder. As to the destruction of the stone *in the bladder*, by means of instruments passed, *not* through the urethra, but through the perineum, so that it might be voided piecemeal, the plan is so ancient that the word *lithotomy*, which, in truth, signifies *cutting the stone*, was thence derived, although it has since been applied to the operation of cutting the bladder for the purpose of extracting the stone entire, which otherwise might have rather been termed cystotomy; and as to the injection of the bladder and the dilatation of the urethra, so that small stones might be extracted or washed through its enlarged canal, the practice has never been lost sight of, and not unfrequently employed. But ancient as these principles of lithotrity undoubtedly are, they were practically of as little use for the removal of urinary calculi as if they had been never known; nor was it till the present day that surgery could boast their efficient union.

Numerous modifications of the apparatus have been already made, and much more numerous, notwithstanding their present very beautiful construction, they still must be. A particular detail of any one apparatus, would therefore be less useful than an enumeration of the parts which are apparently essential to them all. These consist, first, in a straight tube, which may easily be passed through the adult urethra, even when four lines in diameter. Secondly, an elastic forceps contained within this canula, formed, according to circumstances, of two, three, or four elastic branches, which expand to enclose the

stone when pushed beyond the end of the canula through which they act, and which, when partially withdrawn, retain it firmly within their grasp. Thirdly, of a perforator, drill, or excavator, lodged within the forceps, by the action of which upon the stone it is reduced to fragments, or to powder. The various forms of sounds and catheters, and the different kinds of syringes and other subordinate apparatus, although valuable auxiliaries, can scarcely be deemed peculiar essentials of the process.

The most important improvements in the Baron Heurteloup's apparatus, and those chiefly dwelt on by Mr. Burnett, seemed to be the facility with which either or all the branches of the forceps could be moved, together or separately, so that the grasp could be extended from a third to half a circle, and the stone be more securely fixed by withdrawing each branch so that all would act upon it, which otherwise but seldom is the case. The facility with which either perforator, indicator, excavator, &c. can be introduced through the chief forceps, as occasion may require, the use of a smaller forceps to assist in the apprehension of the stone, and more especially in the power of enlarging the crown of the drill, whether virgule or excavator, to any required size, so that a stone which would require many sittings and many holes to be bored through may thus be reduced to a shell at once. Furthermore, the two-branched forceps, or *brisse-coque* (which is an instrument so greatly superior to the *brisse-pierre* of Amusat, that it may be regarded as a new one), both seizes and crushes the fragments, and will destroy with facility flat calculi, which so commonly elude the power of the other instruments.

A very ingenious bed was also shewn; and although it may be considered but subservient to the general plan, when large stones are to be excavated, we cannot but think it a very useful appendage; and such, we feel assured, it will be considered by every surgeon who is anxious not only to destroy the stone, but to destroy it with the greatest possible ease and safety.

The experimental demonstrations, which included not only the mode of using the instruments in the various operations, but also the mechanism by which their actions are produced, were

illustrated by greatly enlarged diagrams of the apparatuses both of Civiale and Heurteloup; and the instruments were all of them taken to pieces, and the parts of which they are constructed separately and conjointly shewn. We congratulate Mr. Burnett upon being the medium of this communication to the profession, and the Baron upon allowing it to be made; for previously, although the instruments and their action had frequently been shewn, there had been a needless mystery preserved about their mechanism, which could not fail, had it been persevered in, to have been highly prejudicial to the philosophic character of the ingenious foreigner by whom they have been designed. The communication also was made but just in time, for a *brisse-coque* has, we are informed, been constructed, which, if not on the same plan as that of the Baron, promises to be at least as effectual; and the separate motions of the several branches of the forceps has been likewise introduced into the instruments of Civiale.

[Diagrams of the bed and of some of the instruments, as well as much interesting information on the subject of Lithotritry, will be found in the communications of Baron Heurteloup in our preceding volume.]

The meeting was extremely well attended—indeed, one of the fullest of the season. In the Library we noticed specimens of selenium and cadmium, some lava (plain and enamelled), such as has been lately used as street labels in Paris, and a memoir "*Sur la Cataracte Congenitale*," presented by Dr. Lusardi. We also examined, with much interest, the very ingenious calculating instruments of M. Palarino.

On Friday next, Mr. Faraday will introduce the subject which was unavoidably postponed a few weeks since—viz. Phonics; with "observations on new musical instruments."

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#### COLLEGE OF PHYSICIANS,

Monday, May 17.

DR. TURNER IN THE CHAIR.

THE first paper, read by Dr. Hawkins, was

*On the Acute Inflammation of the Epiglottis*, by Dr. Burne.

The author observed, that acute inflammation affecting the epiglottis,

without extending to the contiguous parts, is so rare a disease that but few examples of it are to be found on record. Two cases of this nature, however, have fallen under Dr. Burne's notice, the particulars of which he detailed. The first patient recovered, but the second perished at the end of four days. In both, the most remarkable symptom consisted in the extreme difficulty, or "impossibility," of swallowing, while the throat did not exhibit any appearance of tumefaction.

A journeyman, aged about fifty, at the time he was seen by the author, had been labouring under difficulty of swallowing for thirty hours. So great was the impediment to deglutition, that not a drop of water was allowed to pass. On attempting to look into the throat, the same difficulty was experienced in having the mouth fully opened as is met with in cynanche tonsillaris; but this having, by some perseverance, been overcome, a satisfactory view of the parts was at length obtained. The fauces were "open and unobstructed," having a diffused redness over them. Anxious to determine what might be the cause of the difficult deglutition, the tongue was depressed forcibly, when the epiglottis came into view—prominent, red, swollen, and resembling a Kentish cherry. The complaint was nearly local; consisting in extreme difficulty of swallowing, and in the exhaustion dependent thereon. The system generally sympathised but little,—there was inflammatory fever, indeed, but it was mild. He had been already bled to syncope, leeches had been applied to the throat, and he had been purged. Leeches were again applied and tartar emetic given in pills, while mercurial ointment was rubbed in, to guard against the probable consequence of infiltration about the glottis. This treatment brought the patient up to the fourth day, when the fever and inflammation had subsided, but the epiglottis continued so much swollen as to render the introduction of nourishment in any form extremely difficult, though it now became strongly indicated by the state of exhaustion and by the return of appetite. Next day, however, he was able to swallow fluids, and ultimately did well.

The second case occurred in a lady, far advanced in pregnancy, who was attacked one day with the usual symptoms

of cold and sore throat, to which was added tenderness about the larynx, discoverable by pressure made externally. Next day, deglutition was almost impossible, yet unattended by tumefaction of the fauces. Bleeding was had recourse to, both generally and locally, but the issue was unfavourable. On examination, the epiglottis was found stiff and thickened with traces of pus; the surrounding parts of the larynx were sound; the lungs infiltrated with serous effusion.

The peculiarities, then, in this affection are the extreme difficulty of deglutition, without tumefaction of the fauces, while the respiration remains free. It is distinguished from inflammation of the larynx by the affection of the voice and difficult respiration which attend this last condition. The author of the paper conjectures that epiglottitis, though rare in its simple form, may nevertheless be frequently present in combination with inflammation of the neighbouring parts—especially in scarlatina.

Dr. Baillie remarked how limited the power of bloodletting was in laryngitis; and the same observation holds good as applied to this disease. Dr. Burne thinks that a moderate quantity from the neighbourhood of the inflammation, as from the jugular, followed up by leeches, would probably be the most eligible form of depletion. To this may be added purgatives injected per anum, mercurial inunction, and blisters to the throat. The exhaustion is so considerable from inanition, that it becomes a question whether the stomach-pump might not be used for the introduction of food. Dr. Cholmeley (who, with Mr. Stanley, attended the second case) has also proposed scarification of the epiglottis, as likely to diminish the tumefaction of the part. The symptoms are not such as to require tracheotomy.

The above was followed by

*A short Account of the Sandrock Spring, in the Isle of Wight, by Dr. Culvert.*

This spring was stated, by Dr. Marcet, to be the strongest chalybeate with which he was acquainted. It contains nearly two grains and a half of sulphate of iron, and two grains of sulphate of alumina, in the ounce; the great strength of which will be more apparent when we add that the water at Tonbridge, which is reckoned a strong chalybeate, does not contain *half a grain of*



*iron in the pint.* The dose of the Sand-rock spring may be half an ounce three times a-day, diluted with an ounce of plain or of some aromatic water. It has been found useful where other tonic mineral waters are of service, having the advantage of being stronger than any other yet known.

week in a case of hydrophobia at St. Thomas's Hospital. It appeared to act as a narcotic, but exerted no decided influence over the disease.

#### SLANDER AGAINST ONE OF THE SURGEONS OF ST. BARTHOLOMEW'S\*.

IN the Magazine of Slander for last week is contained another specimen of the Editor's partiality for dramatic exhibitions. It represents one of the surgeons of St. Bartholomew's refusing to look at a patient in the receiving-room, on the plea of the case being a hopeless one, till he is offered a fee, which so far alters his opinion that he writes a prescription, and pockets the sovereign. This anecdote was sent to us more than three months ago, but we declined publishing it, because we did then, and do still feel convinced, that the circumstances have been misrepresented. It is rather remarkable that we who are accused by the *Lancet* of being hostile to the surgeon alluded to, should have declined to publish the calumny, while our worthy contemporary not only inserts it, but endeavours to add to its point by a little theatrical embellishment. Is this love of justice or love of slander—or is he ignorant against whom the blow is levelled?

#### EXTRACTS FROM JOURNALS,

##### *Foreign and Domestic.*

#### POISONING WITH PREPARATIONS OF MERCURY.

M. ORFILA lately read, at the *Academie de Médecine*, a memoir on the above subject, containing some new and important views. The Advocate-General of the *Cour Royale*, at Orleans, demanded of M. Orfila a solution of the following question:—"Does the existence of mercury in its metallic state in the intestinal canal of an individual, prove that he has been poisoned, provided the symptoms of poisoning have been present?" The case was this:—A woman died after having had symptoms of a "bilious" kind. M. Caron, under whose care she was, had not at the time

#### LIGATURE OF THE INTERNAL ILIAC.

WE have lately seen a preparation taken from a patient in whom Dr. Stevens (whose interesting paper on the Blood we analyzed in our No. of May 8th) tied the internal iliac, for an aneurism of the ischiatic artery, which occurred in a black woman at Santa Croix in 1812. The patient lived 10 years, when an opportunity was afforded by her death, from some other disease, of examining the parts, which were afterwards sent to London, and would have remained for an indefinite period in a cellar in the city, had not Dr. Stevens happened to be in town, and to have his attention called to the subject by observing that Mr. Lawrence, in his Lectures (see *Gazette*, No. 128), alluded only to one case in which the operation had been put in practice. This induced Dr. S. to have his preparation sent to the College of Surgeons, where a minute examination of it was made a few days ago in the presence of Mr. Lawrence, who, we understand, expressed himself as perfectly satisfied. The preparation, though not in good condition, still exhibits the internal iliac converted into an impervious cord where the ligature was applied, and the remains of the aneurismal swelling on the ischiatic artery.

The operation was performed in another case in the West Indies, and we believe that a preparation of the parts, which was sent to Sir A. Cooper, is now in the museum at Guy's. It has also been performed in this country, in America, and at St. Petersburg. In this last case, the Emperor settled a pension on the surgeon who operated.

#### THE GUACO.

THE guaco, so much extolled as an antidote to the bite of poisonous serpents, (see *Gazette*, No. 123,) was tried last

\* See a Note from Mr. Vincent, at page 320, received as this sheet was passing the press.

any suspicion of poison. However, the public functionaries having afterwards been led to suspect foul play, had the body disinterred twenty-five days after the burial. Two perforations were found in the stomach, having this peculiarity, that the serous and muscular tunics were destroyed to a greater extent than the mucous. Globules of quicksilver adhered to the inner surface of the stomach; a still greater number were found in the duodenum, the jejunum contained none, but nearly a drachm of the metal was found in the cæcum, where it presented large globules. Some of these were also observed in the great intestine. The entire quantity of mercury found in different parts of the bowels amounted to about two drachms. But no trace of any poisonous substance was met with. As the woman in whom the mercury was found had not taken any of it, at least so far as was known, during her illness, M. Caron and another medical man stated, that though they could not positively affirm that poison had been administered, still they thought the presumption was that it had.

To solve this problem, Orfila informs us that two sets of experiments were necessary; 1st, to administer to animals mercurial preparations, not mixed with substances capable of decomposing them; and, 2d, to administer them with substances that were calculated to produce that effect. These experiments gave the following results:—

*First Series.*—Dogs were poisoned with corrosive sublimate: they were buried, and disinterred at the end of from two to four months. No trace of metallic quicksilver was found in the alimentary canal, although the presence of some mercurial preparation was easily determined. The same experiment with the oxides of mercury gave a similar result, except that some globules were found where the black oxide was the one used; but then, it is to be kept in mind, that this preparation naturally contains some portion of metallic quicksilver. Of the mercurial salts, the proto-nitrate is the only one which, after having remained some time in the stomach, is decomposed, so as to afford metallic mercury. This reproduction of the quicksilver is doubtless owing to the presence of a certain quantity of albumen and gelatine in the stomach. Mercurial ointment introduced

into the stomach affords metallic globules at the end of some hours.

*Second Series.*—If mercurial compounds be administered with substances capable of decomposing them, such as the proto-sulphate of iron, the oil of turpentine, copper, arsenic, zinc, albumen, or gelatine, then metallic quicksilver will not fail to be discovered in the alimentary canal. From this it appears, that if, in an individual who has had symptoms of poisoning, a certain quantity of metallic mercury is found, particularly if along with it there be any substance capable of having effected its decomposition, it is very probable that such individual had been poisoned, provided, however, that it be proved that mercury, in its crude state, had not been introduced into the stomach.

M. Orfila concludes, with regard to the particular case which led to these inquiries, that it is impossible to affirm that poisoning had taken place, although there be room to suspect it.—*Journal Hebdomadaire.*

#### PRECAUTIONS IN THE OPERATION FOR CATARACT.

A considerable number of cases of cataract have been operated upon during the present season by M. Dupuytren, at the Hôtel Dieu. Depression is the method almost exclusively adopted by him; and in performing this he has the patient placed in bed, and laid on the back, the head being conveniently supported, and fixed. By these means he thinks that accidents from the movements of the patient are best guarded against, as well as those which may occur in transporting him from the operating chair back to his bed. One of the inconveniences which M. Dupuytren has most frequently met with in operating for cataract, with the patient sitting up in a chair, is syncope, a circumstance which proves extremely embarrassing to the surgeon. Last spring, M. Dupuytren was called by M. Husson to a patient who had been operated on for cataract a long time before, and who felt some inconvenience in one of his eyes. The operation had consisted in extraction, and had only been performed on one eye. The patient had been placed in a chair, and scarcely had the surgeon finished the section of the transparent cornea, when he fainted so profoundly that the operation could not be completed; the lens remained in its place;

the wound healed; and some months after the other eye was operated upon by the same surgeon. The method of extraction was adopted on this occasion also; the patient was again placed on a chair, and syncope came on as before, giving rise to very great difficulty and embarrassment. M. Dupuytren was called to him on account of very violent pain which he experienced in the eye which had been incompletely operated on.

Tendency to vomit, and actual vomiting are, as is well known, very frequent after operations for cataract, particularly in children. One of the best methods of removing this, consists in making them drink a few cups of Seltzer water.—*Ibid.*

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### LETTER TO DR. BURROWS.

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To the Editor of the *London Medical Gazette*.

Reigate, 11th May, 1830.

SIR,

AN association of medical men in Surrey, under the title of "The Surrey Benevolent Medical Society," met yesterday at Epsom, and feeling a wish to do some small justice to a worthy, an able, and an honourable man, agreed to address a letter to Dr. Burrows, of which the following is a copy; and at the same time directed me to request the favour of you to cause its insertion in the next number of the *Medical Gazette*.\*

I have the honour to be, sir,

Your most obedient servant,

THOS. MARTIN, Sec.

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To Dr. Burrows.

Epsom, 10th May, 1830.

SIR,

THE members of the Surrey Medical Society, in consequence of circumstances which have occurred, and from which you have been most strangely and unjustly misrepresented and traduced in the public newspapers, beg permission to express their sympathy, and the assurance of their most cordial and undiminished regard to you, as individually their friend, the friend of this society, of medical science, and of humanity.

Conscious of your integrity, and of the blameless as well as praiseworthy tenor of your professional conduct on all occasions,

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\* It was impossible for us to insert it last week, from crowd of matter.—E. G.

you hardly stand in need of this assurance from such humble individuals; but you have been so hardly and unjustly treated by the public press\* in particular, that they consider your professional brethren may without impropriety state to you, that they are not forgetful of your former labours in behalf of the general practitioner, of the merits of your admirable writings, and of the friendship which they have collectively and individually experienced at your hands.

Wishing you a long career of happiness, success, and of meritorious exertion in behalf of your suffering fellow-creatures, they remain

Your faithful friends and servants,

JOHN PARROTT,  
THOMAS MARTIN,  
JOHN N. SHELLEY,  
GEO. FLETCHER,  
JAMES TUNSTALL,  
JOSEPH WARD,  
GEORGE BOTTOMLEY,  
EDWARD WALLACE,  
CHARLES COOPER,  
THOMAS B. TOOVEY,  
JOHN WINSLOW MAYD,  
T. W. MONTAGU,  
WM. HART,  
W. CHALDECOTT,  
THOMAS STEELE,  
THOMAS SMITH,  
ALFRED HARDWICKE.

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### HOSPITAL REPORTS.

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#### GUY'S HOSPITAL.

*Disease of the Spine—Issues—Setons—Moxa—Electricity—Convalescence.*

MAY 10.—J. Fowler, aged 19 at the time he was admitted into the hospital, which was on the 22d of April, 1829, under the care of Mr. Key. About eighteen months ago from the present date he was seized with pain in the back, between the scapulæ; and in about two months after he perceived a numbness and stiffness of the lower extremities, and extending over the abdomen. By degrees the lower limbs became quite paralyzed, and eventually he lost all power over the rectum and bladder, the urine and fæces passing off involuntarily. He states that he applied to a medical practitioner at Avebury, in Wiltshire, where he resided, who made several issues in the back near the spine, from which he derived some benefit at the time they first began to discharge; but this improvement was only temporary. He remained under this gentleman's treatment for about four months, and not getting any better, his medical attendant advised him to go to London.

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\* Not by the *medical press*—with one exception.—E. G.



When admitted at this hospital, he was so far deprived of the use of the lower part of his body as to be unable to sit up in a chair without being fastened to it. On examination he did not complain of pain in any part of the spine, or of tenderness or pressure; but the column at about the third and fourth dorsal vertebra was considerably curved backwards, giving to the part the appearance termed hump-back, which left no doubt but that ulceration and absorption were going on in the intervertebral substances, if not in the bones themselves at this situation.

The treatment consisted in introducing a seton on the right side of the spinal column, opposite to the distortion, keeping the patient in bed upon his back, and exhibiting laxatives. Although the urine and feces came away involuntarily, he was conscious of it at the time, but had no power to prevent the occurrence.

In about a week after the seton was made, he was able to move his legs up and down in the bed, and had recovered in a slight degree the use of the bladder and rectum; this however remained but for a short time, and he soon became as ill as ever.

On the 29th another seton was made on the left side of the spine, opposite to the former.

In the month of August he was attacked with fever, and was attended by Dr. Bright. During the febrile excitement he became the subject of almost incessant vomiting, which continued for several days, and for which he was directed to have mustard cataplasms applied over the stomach, and to take effervescent draughts, with tincture of opium, when at length, by these means, the vomiting became arrested. He gradually recovered from the fever, and in about three weeks became convalescent; but the paralysis continued the same. After remaining for some time without any thing further being done, a skein of thread was passed through the track of the first seton; each of the others, as well as this, remained in the wounds about six weeks. As the skeins were removed, the sores were allowed to heal, and he remained for a considerable time without any farther attempt to relieve him, when the application of moxas was had recourse to between the shoulders. In about two months after the febrile attack he could move his lower extremities slightly; and by continuing the use of the moxas he gradually improved. Having remained in bed about ten months, he found that he had gained considerable strength and motion in the lower limbs, and likewise could retain the urine and feces tolerably well. He was now able to stand and support the weight of his body, with the assistance of a chair, for a few minutes, but could not advance one leg before the other.

About six weeks since he was ordered to

have an electric spark passed every day along the course of the spine, and down the back; and he says from this he finds great benefit, and seems to gain strength faster than he has done at any time before. He can now stand without support, and advance one leg before the other. When he feels an inclination to go to stool, he is obliged to be assisted to the water-closet immediately; he passes his urine less frequently, and in a greater quantity at a time. The curvature is much less than what it was when admitted; in fact, it deviates now but very little from the natural line.

Since January he has used an iron support, which he now continues to wear on his back: this instrument is the one first suggested by Sir Astley Cooper in cases of this description.

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On Tuesday, May 11th, a boy, seven years of age, was operated on by Mr. B. Cooper, for stone. Mr. C. used the straight staff and scalpel. Two small calculi were extracted, highly polished on the surface. No unfavourable symptoms followed: the wound is now healed, and the boy well.

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#### ST. THOMAS'S HOSPITAL.

*Lithotomy—Reaction without Power—Sloughing of Wound—Recovery.*

On Friday, April the 9th, Mr. Green performed two operations for stone in the bladder; one was on a man fifty years of age, and the other on a boy aged fourteen. No unfavourable symptoms followed in the former case, which did exceedingly well. In the case of the boy there was nothing remarkable at the time of the operation; he then appeared in perfect health, and did not express any apprehension. The time employed in the cutting process and extraction, did not, in all, exceed five minutes, and he appeared to be doing well until about an hour after, when he complained of being faint, and was soon after attacked with nausea and vomiting. There was a slight oozing of blood from the wound. An opiate draught was given, but this was soon rejected, and nothing further was done than the application of warm camomile to the abdomen, until 9 o'clock P.M. when he was seen by Mr. Green. His pulse was then very low and feeble; his countenance blanched; the vomiting had become more frequent, and his general appearance indicated a state of depression which was not easily accounted for, as the sanguineous discharge had ceased, and could not have exceeded two ounces altogether. He was ordered to take five grains of carbonate of ammonia, with 25 drops of tincture of opium in camphor mixture, immediately. This was again rejected as soon

as swallowed, and on the stomach becoming more composed, half a grain of crude opium was administered by the dresser, Mr. Warde, which was retained, and he was free from vomiting for upwards of an hour, when, as he was continually craving for something to quench his thirst, some barley-water was given him. After this, the vomiting again returned almost immediately, and he continued retching for some time, while the pulse fell till it could scarcely be felt. Brandy was then administered by tea-spoonfuls, with arrow-root, which was returned again almost as soon as swallowed. Pure brandy was given him, and repeated about every quarter of an hour—a tea-spoonful at a time: this was continued for upwards of two hours, when the stomach appeared quite composed. The brandy was repeated at intervals during the night, and the feet being very cold, bottles of hot water were kept applied to them, and camomile timentations to the abdomen as before.

10th, 10 A.M.—He has not vomited until this morning since the brandy was given undiluted, when, without any assignable cause, it has again recurred, and he now rejects this, as well as every thing else, as soon as taken. He does not complain of pain or tenderness on pressure over the abdomen, or in the epigastric region. Pulse scarcely perceptible; tongue white; no oozing of blood has since taken place from the wound.

1 P.M.—Mr. Green again saw him. The dresser had given the patient an effervescing draught, composed of a scruple of carbonate of ammonia, and half an ounce of lemon-juice, with an ounce of water. This the stomach retained for about two hours, after which the vomiting returned as before. The draught was ordered to be repeated, and a mustard poultice applied over the stomach until redness was produced. Finding that he had been accustomed to take gin, this was directed to be given him instead of brandy.

8 P.M.—We visited him, and found that the vomiting had gradually subsided;—he appeared to be more composed. In addition to the gin, he had taken some port wine, with a small quantity of toasted bread. Pulse scarcely to be felt, but appears somewhat stronger since noon. No bleeding from the wound, but plentiful discharge of urine. Feet slightly warm; countenance pale; there is a peculiar diffused blueness over the chest.

12th, 10 A.M.—Has passed a better night than either of the former since the operation. He has had but one attack of vomiting since last report, and that after taking a cup of tea. He continued to take gin and port wine during Saturday night, at intervals, and until Sunday morning about eleven o'clock; up to which time he had taken three ounces and a half of the former and two of the

latter. Pulse 140, and rather sharp; face flushed and blanched alternately; has frequent sighings; eyes sunken, with a glassy appearance; tongue dry; skin hot; complaints of pain across the lower part of the abdomen, with tenderness on pressure. The pain extends down to the perineum. Plentiful escape of urine by the wound, but none as yet through the natural passage. No evacuation from the bowels.

When visited by Mr. Green, at 1 P.M., his pulse was only 120; and it was found that, in this respect, it varied in a short space of time. There was a good deal of tenderness in the perineum on either side of the wound, with dark patches, appearing like ecchymosis, which Mr. G. stated he could not easily account for. The wound looked pale and unhealthy. Mr. G. observed to the pupils, that this was a case where reaction had taken place without power. He ordered a mustard plaister to the abdomen until redness was produced, an enema of warm gruel to be administered, and a tea-spoonful of castor oil to be taken immediately.

9 P.M.—Pulse continues quick and sharp, at present 144; tongue dry and coated at posterior half, red at tip. The bowels not being evacuated, another enema was administered at six; and being yet unevacuated, a dessert-spoonful of castor oil was ordered to be given, and hot poultices to be applied over the abdomen, as the pain still continues.

13th.—10 A.M. Has passed a good night and slept several hours; has had no sickness or vomiting; pulse 138, but still varies in frequency; last night the urine flowed through the urethra for the first time, and the bowels were opened thrice by the castor oil. He took during the night a small quantity of beef tea; there was a great inclination to a return of the vomiting. Countenance this morning much improved, and he expresses himself as feeling much better; has but little tenderness in the abdomen on pressure; warmth natural all over the body. At 1 P.M. when Mr. Green saw him, he said he was not quite so well as in the morning; pulse 132, and feeble; he now feels slight pain on pressure over the inguinal regions; has a good deal of tenderness on pressure also in the perineum; wound still looks pale and unhealthy; he is continually asking to have porter and mutton chop; Mr. Green accordingly ordered them. In the evening, when we saw the patient, he had partaken but of a few morsels of the chop, but very much relished the porter, (half a pint in all,) which did not appear to have disagreed with him; he had likewise taken some beef tea.

14th.—10 A.M. Has slept a good deal to-night, and has lost all pain and tenderness on pressure over the abdomen; pulse quick, with more power; tongue clammy, and mor-

bidly red; skin warm; bowels have acted once. 1 P.M. Since the morning he has taken some boiled eel, some beef tea, and arrow root, and an egg; the pulse has slightly increased in fulness and frequency, and his face is flushed; there is still pain about the wound, with hardness of the adjacent parts. He was ordered to continue the porter and mutton chop: after he had taken these, his pulse again rose, the flush of the face increased, and for some little time a gentle diaphoresis appeared all over the body, and he seemed to be going on remarkably well, when about 5 P.M. there was a sudden alteration; he was seized with faintness, making a sensation in his throat as if he was choking, his extremities became extended and spasmodically fixed, and the eye-balls drawn to one side, and all the muscles of the body seemed in perfect rigidity; some cold water was instantly procured, and poured down his throat, and he recovered in a few moments, and soon after fell into a sound sleep, in which he continued for several hours.

15th.—10 A.M. He expresses himself as feeling comfortable; tongue red and rough, a little furred at the root; complains of thirst; pulse 128, more full than yesterday; has passed a good night; skin warm; less blueness of the chest; the sighings have left him, and the countenance is improved; pressure in perineum causes acute pain; the parts around wound still feel hard, but the dark patches less distinct; bowels not open since last report.

Evening.—Has taken a dose of castor oil, which produced a scybalous stool; has also had for diet a mutton chop and some fish; has taken no porter to-day, but drank some barley water.

17th, one, P. M.—Continues to improve; has had a comfortable night; bowels open once this morning; skin warm; thirsty; pulse quick; tongue more moist; urine passes through wound, and likewise by the urethra; free from pain in the bowels, but is the same as to the perineum.

Ordered, infusion of roses, an ounce and a half; sulphate of quinine, a grain and a half; tr. of hyoscyam. fifteen minims, every six hours.

19th.—The wound now begins to discharge healthy looking pus; pulse 118, less sharp; tongue presents a mottled appearance; less thirst; has had a good night; bowels open; urine passes through wound and urethra.

Porter, half a pint daily.

22d.—The patient now appears quite convalescent from all his symptoms, independent of the wound. Since last report, two sloughs of cellular membrane have come away, and there is less tenderness around the edges.

May 1st.—Having visited the patient from time to time, we found that a third slough had escaped from the wound, which afterwards put on a healthy granulating appearance. A poultice was kept applied to the part. There is now but a very small portion of the original wound which remains unclosed, through which occasionally particles of gravel pass with the urine, and this morning the sister removed a considerable portion which presented itself at the opening; it appeared like a chain, consisting of small grains of calculus, adherent to each other by a thready substance.

In every other respect he is quite well.

#### NOTE FROM MR. VINCENT.

*To the Editor of the London Medical Gazette.*

SIR,

A FRIEND having directed my attention to a charge brought against one of the surgeons of St. Bartholomew's hospital of having taken a fee from a patient, which has appeared in a weekly publication of last Saturday, (the *Lancet*), and now knowing, by means of some expositions which took place last autumn, that a regular system has been adopted of vilifying my character in that publication; I deem it incumbent upon me to assert publicly that such imputation does not apply to me; and I request you will allow the insertion of this contradiction in your next number, assuring you that I regard such conduct disgraceful, and deserving the reprobation of all upright men.

I am, Sir,

Your obedient servant,

JOHN P. VINCENT.

Lincoln's Inn Fields,

May 29th.

#### LITERARY ANNOUNCEMENT.

Mr. William Wallace Currie is preparing for the Press, a *Memoir of the Life, Writings, and Correspondence of James Currie, M.D.F.R.S. of Liverpool, Fellow of the Royal College of Physicians, Edinburgh; of the London Medical Society, &c. &c.* In 2 Vols.

#### ERRATUM.

We have been requested to correct the following error; it occurred in the copy from whence the article was taken;—In the *Memoir of the late Dr. Lister*, in the Number for May 8th, page 214, line 12 from the bottom, for "January," read "February."

W. WILSON, Printer, 57, Skinner-Street, London.



# THE LONDON MEDICAL GAZETTE,

BEING A

WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

SATURDAY, MAY 29, 1830.

## LECTURES ON SURGERY,

*Delivered at St. Bartholomew's Hospital,*

BY WILLIAM LAWRENCE, F.R.S.

— from 299.

### LECTURE XLVII.

*Simple Fractures—Symptoms—various kinds of Displacement—Treatment—Setting the Bone—Bandages—Splints—Administration of Purgatives—circumstances attending Re-union in children and elderly persons.*

I MENTIONED to you, gentlemen, in my last lecture, that the resources of nature in the union of bone are often seen in a very striking way in cases where the consolidation of the fracture does not go on exactly according to the regular course; where, instead of the two ends of the fractured bone being brought in proper apposition, one overlaps the other, so that the two ends “ride,” as it is technically called. Under such circumstances, the union takes place by means of the ossification of the external swelling, which I mentioned to you under the term of provisional or temporary callus, and which here becomes the permanent mode of union.

[Mr. Lawrence presented a specimen, and said it was a remarkable example of this process: for several inches one end rode or overlapped the other.]

I also mentioned that in cases where the ends of the bone do not come near together, the intervening soft substance admits of ossific consolidation, so that the bones become sufficiently strengthened at the part where the fracture takes place for the performance of all the motions and functions which properly belong to that part of the body.

[Mr. Lawrence exhibited a specimen of fracture of the tibia, in which the two extremities were by no means in contact, but in which there was a cross-bar thrown out before and behind, which united them. He shewed two

other specimens, in which portions of the bone were lost in consequence of fracture, but in which, he remarked, the union was sufficiently strong to bear the weight of the patient's body. One of the specimens was of the fibula, in which the union was effected by cross shoots of osseous matter.]

Hence you will observe, that nature does a great deal towards the repairing the effect of the injury in these cases, even in instances which appear unfavourable for the exertion of her powers, and this should encourage us, or rather lead us, to take all possible means for bringing the fractured ends of a bone as nearly as we can in apposition, and maintaining them in that posture, in order to avail ourselves to the full extent of those powers which nature exerts in cases of this kind.

I spoke to you in my last lecture of some varieties in the description of fractures—fracture, where there is not merely fracture of the bone at one point, but where a certain portion of bone is broken into several fragments.—[Mr. Lawrence presented specimens in illustration.]—I mentioned to you the difference of longitudinal, transverse, and oblique fractures, and I observed to you that longitudinal fractures were very rare. Now in this specimen [shewing it] the main fracture has been about the middle of the thigh, but the bone has been splintered, and in fact the fissure extends down longitudinally through the inferior half of the femur, so as to reach into the knee-joint: you see the splinter running down, extending to the joint in a longitudinal direction. This is another case where there is a longitudinal fracture at the upper end of the femur, which has been broken longitudinally for the space of five or six inches, and you see the mode in which the injury has been remedied. This is a longitudinal fracture [another specimen] passing through the condyles into the joint; the main fracture was about the middle of the thigh-bone: in fact, the hardness of the substance which belongs to bones renders them liable in their fractures to several of those

occurrences which take place from violence applied to similar dense substances.

I spoke to you in my last lecture of the Causes of Fracture, and in the observations which I then made, I omitted to mention one cause of fracture by which bones in a certain situation are broken, that is, muscular contraction. At the first view you would suppose when you compared the softness of muscle with the hardness of bone, that the power of contraction in the muscles would not be adequate to produce a separation of the substance of bone; we find, however, that it is capable of producing that effect. Fracture of the patella takes place almost constantly, simply in consequence of the powerful contraction of the muscles which are connected with the bone. The olecranon may be broken by the contraction of the muscles which belong to it, and there are even instances of the long bones of the body being broken in consequence of the powerful action of the muscles inserted into them. I have heard of the femur being broken under considerable muscular exertion in persons making a strong effort, without the direct application of external violence to the bone. It is a rare occurrence, but it occasionally takes place; and it is probable that the contraction of the muscles has a great deal to do with fracture in various instances in which we suppose that it has happened simply in consequence of the application of external force.

I have next to speak to you of the effects which fractures produce, the changes in the state of the limb producing what we call the *symptoms*, or the external circumstances, which enable us to recognize the existence of fracture.

Some of the effects of fracture are immediate, and take place directly after the accident has occurred; others occur more remotely. The first and most immediate effect that is observed from fracture is inability—a general and complete inability in the patient to make use of the limb in which the fracture has taken place. A patient has been walking or running; he falls to the ground, and breaks the thigh bone; he attempts to rise, and feels himself quite unable to do so—he cannot support the weight of his body, or bear at all upon the limb. The patient himself is sensible that the bone is fractured; he says immediately, “I have broken my leg;” and when a patient expresses himself in this way, in consequence of complete inability to use the limb, you may be sure that the leg or thigh is broken—it is seldom that the patient is mistaken under such circumstances. In cases of violent bruise a person can rise, and support himself, but commonly in cases of fracture, he feels the bone give way—he is sensible of its breaking or cracking. This inability to use the limb, of course, is more complete in certain bones than in others,

that is, in fracture of the femur or of the os brachii the inability is more complete than in fracture of one of the bones of the fore arm or leg, because, when one bone only is fractured, the other enables the patient in some measure to use the limb. The observation applies more particularly to instances of fracture occurring in the limb where there is but one bone.

Then, generally, a change of figure is observed in the limb,—it is shortened,—it is bent, or it presents some unnatural configuration externally, and that quite suddenly. This also is more particularly observed in the thigh and upper arm than in other situations, that is, where there is only a single bone; for in the leg and fore arm, you may have one bone broken, and no sensible change in the external shape of the limb.

Then, thirdly, on moving the broken bone, the fractured ends, when rubbed against each other, produce a grating sensation, which is perceptible to the patient, and very sensible to the hand of the surgeon who makes the examination. This sensation is technically called *crepitus*, and when it is felt you become quite certain that the bone must be broken. This is to be regarded as a sure, or pathognomic, sign of fracture;—if you feel the grating in the limb decidedly, there can be no doubt that the bone is broken. It must be observed, however, that a fracture may take place, and the fragments of the bone be in such relative situations to each other, as not to rub or grate when the limb is moved. They may be separated more or less, or some soft part may be included between them, so that the mere circumstance of not being able to feel a crepitus does not prove that a fracture has not taken place, although the existence of crepitus is a satisfactory proof that fracture has occurred. These are the primary or immediate symptoms of fractures.

When a bone is broken, it very commonly happens that the fractured ends become displaced, and this displacement may either take place immediately, as the direct consequence of the application of the injury which produces the fracture, or it may take place at some distance of time after the fracture has occurred. The displacement may be primary, or immediate; or it may be secondary, or remote. If a limb is broken by a carriage-wheel going over it, or a heavy substance falling upon it, the fracture may be accompanied at the same moment by the displacement of one of the ends of the bone. The same injury which breaks the bone may displace one of the fragments; very often, however, the bones are not displaced immediately on the accident occurring, but become displaced afterwards, in consequence of the action of the muscles that are connected to one of the fragments;—muscular action is the principal cause of the displacement

which takes place under such circumstances. It is true that the weight of that part of the limb which is furthest from the trunk of the body, may cause displacement: for instance, supposing the arm to be in a horizontal position, and the humerus to be broken—when that takes place, the weight of the hand and fore arm would occasion that part of the arm to drop, and become displaced. But, in many instances in which a limb is fractured, it is so situated as to undergo no displacement from the weight of the inferior part of the member, and in fact, it is not displaced at the time of the accident, but the muscles connected with the lower part, by contracting, gradually displace it afterwards.

The ends of fractures may be displaced in different ways. In the first place, the displacement may occur in the direction of the axis of the limb, just as I mentioned to you of the humerus, where the lower part drops, so that the limb presents a protuberance in front, and a corresponding cavity behind. Now you will observe, that this is a kind of displacement which cannot occur when one of two bones is broke, as in the fore arm and leg,—indeed, most of the various kinds of displacement are observed in fractures of the limbs containing a single bone.

Then the bone may be displaced in the direction of the length of the limb, producing the effect you here see, [pointing to a specimen,] where one end of the bone overlaps the other, or rides. This is a displacement producing an unnatural projection and thickness at one part, but more particularly a general shortening of the limb. When you trace with your hand the outline of the bone, carrying your fingers from the upper extremity of the bone that is connected with the trunk down to the fracture, you come abruptly to a termination—you feel what appears like a rising of the extremity of the bone, in consequence of the mode in which the inferior fragment has been displaced. This has been called the “rising end of the bone,” from the idea which is communicated on first examining the bone, that there is an unnatural projection at the part where the fracture has taken place. In truth, however, this end does not rise; for this extremity of the bone is in the natural position, but it appears to rise, in consequence of the other extremity being pushed out of the natural situation, and drawn behind it. Thus you find generally that the part called the rising end of the bone is in its natural place, while the portion seated below it is the part that is displaced.

Then the bone may be displaced, in the direction of the circumference of the limb; and this also affects the fragment of the bone which is most remote from the trunk. The portion which is connected with the trunk remains in the natural situation, in consequence of that con-

nexion, but the portion below becomes twisted inwards or outwards. For example: in fractures of the thigh, supposing the limb to be broke in the middle and left to itself, you find the inferior fragment of the bone turned outwards, and the leg and the foot will be everted. The inferior fragment turns in the direction in which it is drawn by the action of the strongest muscles connected with it. The position of the inferior fragment is no longer regulated by the attachment which the upper end of the bone has to the trunk of the body, and therefore it obeys the action of the muscles inserted into it. The question as to the position which the bone will take under such circumstances, is simply this—What is the situation in which the action of the muscles will place it? If the fracture be in the thigh, it will turn the lower fragment, and consequently the foot, outwards, into the *everted* position. That is displacement in the direction of the circumference of the limb.

Then the fractured bone may be displaced *laterally*. Supposing the bone is broken through transversely, you may have the two ends in apposition, or corresponding by one half of the surface, or by the edges, so as to constitute a lateral displacement. These are the various ways in which the bones may be displaced in fracture; more particularly in cases of simple fracture.

I have mentioned to you that these displacements are principally effected by the action of the muscles which are connected to the fragments of the bone farthest from the trunk, the cause of the displacement being thus combined with the effect produced by the weight of the lower part of the limb. It is possible, however, for a broken bone to be displaced in consequence of the contraction of the muscles which are connected with the fragment still attached to the trunk. Supposing the fracture to take place at the upper part of the thigh-bone—you then find that the superior fragment may be drawn upwards by the action of the flexor muscles which come out of the pelvis and are inserted into the trochanter minor. Here [shewing a specimen] you observe that the bone forms a complete elbow, the superior fragment having been drawn upwards by the contraction of the flexor muscles. It is a case of fracture occurring in the upper part of the thigh. The lower end of the bone is not drawn up so as to be placed behind the superior fragment, and the shortening of the limb here is not from the overlapping of the bone, but from the angle or elbow produced by the superior fragment being tilted upwards and forwards by the flexor muscles. In the same way, when a fracture takes place near the upper end of the humerus, the action of the *latissimus dorsi*, and other muscles, may displace the upper fragment, and occasion an unnatural prominence in the situation of the



fracture, somewhat similar to that in the thigh.

We have not much to say respecting the *diagnosis* of fractures—that is, the distinction of fractures from other accidents; for the peculiar signs which denote the existence of fracture are so clear and unequivocal, that there is little fear of confounding it with other kinds of accident. However, when fractures take place in the neighbourhood of a joint, they may be confounded with dislocations. In the instances of some joints there is an obscurity in making the distinction; the circumstances, however, on which the distinction depends, will be better appreciated when I speak of particular dislocations. In general it may be observed, that, in cases of dislocation, there is much greater stiffness and inability to move the limb. I do not mean of the patient to move it, but that great difficulty in moving the limb is experienced by another person in examining it; and in this way it is easily distinguished from fracture. In case of a fracture near a joint, another person can move the limb, with pain to the patient, to be sure, but in a greater degree than if dislocation had occurred.

There is a kind of accident described by surgical writers which it is very difficult to distinguish from fracture; the accident is rare, and when it occurs it is treated in the same way as other fractures: it is the separation of the bone from the epiphysis. At a certain period you are aware that the articular ends of bones are united to the shafts of the bone by cartilage, that is, the bone is not one entire piece; and it is possible, from the effect of external violence, that the head of the bone may separate at this cartilaginous part, that is, at the epiphysis. Probably you will not be able to distinguish from the external appearances between such cases and fractures. I therefore need not say any thing farther respecting the diagnosis. I may, however, remark that this separation of the head of the bone can only take place in young subjects, for after a certain age the cartilaginous substance is consolidated, so that the bone constitutes one entire osseous piece.

The circumstances of fracture are so very various, according to the extent of the injury—the number and importance of the parts involved—the age of the individual—and the circumstances in which he is placed, that the *prognosis*, that is, the opinion we form respecting the issue of the case, must be subject to the same kind of variety. Nothing can be more simple than a fracture in a bone, unattended with contusion or laceration of the soft parts, occurring in a healthy individual. We know perfectly well, that under judicious management, and that of a simple kind, such an injury will be completely and effectually remedied—the patient incurring no

risk of any serious impediment to the use of the limb. On the contrary, in cases where a bone is extensively broken and comminuted, and where the soft parts are considerably bruised and lacerated—where there is a complication with such accidents, of injury of the arteries, or of the joints—more especially if those accidents occur in elderly persons—in those of bad or unsound constitution; under circumstances where the patient will not have all the comforts and means that are necessary to his restoration, there is great risk, either of great imperfection and deformity in the limb subsequently, or, in fact, great danger to life, in consequence of the more immediate or ultimate effects of such accidents. Thus you have every variety, according as the fracture is simple and the circumstances otherwise favourable, or the injury such as to involve danger to life at the moment, or the loss of the use of the limb, supposing the accident should not prove fatal.

There are many cases of fracture in which the issue is doubtful, without speaking of a case that is of the worst kind, where we entertain an unfavourable opinion from the very commencement. When fractures take place in the neighbourhood of joints, we do not know exactly whether the fracture extends into the joint; we are equally at a loss as to the consequences in cases of fracture where some considerable vessels may have been wounded. There are many instances in which we are under great doubt at the time of the accident occurring, as to what the event of the case may be—where we find it necessary to speak guardedly to the patient, and to his friends, as to the probable issue of the case. There are several instances in which, although we entertain a confident expectation that the injury may be repaired, and that the use of the limb may be recovered, we find it impossible, perhaps, to prevent altogether the occurrence of some deformity. Even under the most judicious management, in certain cases, the exact apposition of the broken ends of the bone is difficult to be accomplished and maintained, and then some difference in the length and figure of the limb is almost inevitable. Frequently, in consequence of the length of time occupied in the treatment, considerable stiffness ensues; the free play of the muscles that are seated about the broken bone is impeded; the constrained position in which the limb is kept produces stiffness of the articulation, immediately adjoining the fracture; and thus more or less imperfection of the motion of the limb is produced, and lasts for a considerable length of time, in many instances of fracture, even in spite of the greatest care.

It has been stated that fractures do not unite in pregnant women; that these remain ununited until the period of utero-gestation is at an end, and that then they become con-

solidated by ossific union. It is not very common to meet with fractures in pregnant women, so that I cannot, from experience, immediately say how this may be. In many instances, however, fractures in pregnant women have united just as they would in other females, so that I doubt altogether, for my own part, the truth of this statement. I have never seen an instance of fracture in a pregnant woman that remained ununited.

I come next to speak to you respecting the treatment of Simple Fractures. I have already mentioned generally the indications of treatment in fractures which are to remove the broken extremities of the bone from the unnatural position into which they may be thrown, and to bring them into exact apposition, and to retain them by suitable mechanical means in a state of as perfect rest as we can accomplish, these means being combined with appropriate treatment for the occasional symptoms that may attend the case. Now the circumstance of retaining the broken ends in apposition to each other, and of keeping them quiet in that state, requires of course that the patient should remain in one position for a considerable length of time; usually it is found necessary to confine the patient to bed during the period occupied in the consolidation of the fracture. It is requisite, therefore, that the bed to which the patient is thus to be confined should possess certain properties, or qualities, which are calculated to answer the ends that we have in view; at all events, it is very desirable that the patient who is doomed to keep his bed for a number of weeks, should be made as comfortable as possible. So far as the treatment of fracture goes, what we want is, that the limb, more especially if it be the lower limb, should be uniformly and regularly supported. We want a level surface for the limb to rest upon; it should be supported equally in the whole of its length. It is, therefore, by no means advantageous to put a patient with a fractured limb on a feather bed, because the heaviest part of the body—the trunk, sinks, depresses the surface, and thus the limb comes to be situated on an inclined plane, so that the weight of the body tends to produce, or at all events to favour, the displacement of the fractured ends of the bone. A hair mattress, or a bed which, with requisite softness, shall be capable of preserving a tolerably uniform surface, is the most advantageous. The support of the bed underneath should be firm; it will be of no use to have a firm mattress if the bed on which it is supported give way under the weight of the patient. Therefore the sacking which is commonly found in bedsteads is not well calculated for this purpose, because it gives way in the middle. It is preferable to have a solid surface for the support of the mattress, made by placing pieces of board across the bedstead, under the surface on which the

trunk of the body and the fractured limb are to rest. Then, having the patient placed on a bed of this kind, having removed the dress, which of course you should do in such a way as not to inflict any additional violence upon the limb, cutting off whatever cannot be removed without injury, you proceed to place the limb as nearly as you can in the natural position; and in doing this you accomplish what persons call, in common language, "setting the bone," the object being to draw the broken ends out of any unnatural position into which they may have been thrown, and to bring them into regular contact. This process, which by the vulgar is called setting the bone, divides itself, in learned language, into three parts—extension, counter-extension, and coaptation. If the ends of the bone overlap, the object of extension will be to draw the inferior fragment down till it comes to a level with the superior one. An assistant, therefore, takes the inferior end of the limb, and draws it straight, with a view of disengaging it from the upper portion; but if he were to draw the lower end while no force was applied to the upper extremity, the entire limb might obey the force so applied; and instead of having the lower fragment drawn out you might have the whole of the limb and pelvis also, drawn downwards. In order, then, to do this properly, you must have the superior end fixed, and the power applied to it is called the counter-extension: so that opposite force is applied to the two ends of the bone, and the two forces are called extension and counter-extension. Now there are two modes of applying this force: you may either apply the extending power to the inferior extremity of the broken bone, or you may apply it to the part of the limb situated beyond it. For example—in the case of a broken thigh, you may apply the extending power to the leg or foot; and you may apply the counter-extending power either to the pelvis or that portion of the limb above the seat of injury. The French surgeons say, that it is a matter of importance not to apply the extending forces to the part that has suffered the accident, but to the neighbouring parts. They state that the pressure of extension and counter-extension irritates the muscles seated on the fractured limb, excites spasmodic contraction, and thus adds to the pain and difficulty of replacing the fracture. The object, however, may be accomplished either in the one way or the other.

When the displacement of the fracture is remedied, the bones will perhaps come into proper apposition of themselves, and that is technically called the process of coaptation. Now the truth is, in many instances this process is not required at all, because the ends of the bone are not displaced, and therefore we do not want to replace them.

In cases of fracture of the tibia or of the radius, it often happens that the ends of the bone are not displaced, and the setting of the bone therefore is not necessary. However, patients themselves—those who are ignorant of this subject—imagine that in every case where a fracture has occurred, there must be a “setting” of the bone; and therefore they, as well as their friends, are very anxious to know whether the bone be set or not; and they have an idea that the setting is attended with great pain, and therefore unless the limb be pulled about a good deal, they will not believe that the bone is set. Every one must know that where it is not necessary to apply violence, it ought not to be done; the patients, however, cannot endure the idea of setting the bone, and if they have not received the quantum of pain that they calculated upon, they conceive that they have still to undergo it. It is well, therefore, to set the minds of the patients at rest upon that point, and to assure them that the fracture is replaced, though they may not have had what they consider a reasonable share of suffering on the occasion.

Then when the fracture is replaced as well as it can be accomplished, the next consideration is, how it can be retained in its situation? and there are various means to be adopted for this purpose.

It has been a very common practice in this country, introduced by Mr. Pott, and followed in consequence of his recommendation, to place over the limb, in the situation where the fracture has occurred, a piece of *soap plaster*, or some glutinous substances; and if any thing of that kind is to be applied, the ordinary soap plaster, which is a mild substance, may be used; it produces no inconvenience, no irritation of the skin, and sometimes it is a partial defence against the friction of the bandages.

Then bandages are commonly used in fractures, and other mechanical means are applied, with a view to maintain the fragments in their proper position, and to keep the limb at rest. With respect to bandages, sometimes a circular bandage is applied—a roller carried round and round in the ordinary way. In other instances, bandages are used which are hardly ever employed except in cases of fracture. There is a bandage which is called the *eighteen-tailed bandage*, which consists of a longitudinal slip, with transverse slips sewn to it of different lengths, so that they can be applied with the ends folded over each other, and thus encircle the limb with a certain degree of force; at the same time they admit of being applied and undone without elevating the limb, or giving that degree of motion to the fractured part which is necessary in the application of a circular bandage. The bandage of Scultetus is merely an *eighteen-tailed bandage*, in which the transverse pieces are not sewn to-

gether on the common *perpendicular piece*, but on which they are merely spread, so that you can take away one or more pieces when they become soiled, and replace them, from the transverse pieces being unconnected with each other. Now circular bandages are not generally well adapted to the treatment of fracture: the motion of the limb which is necessary for their application is injurious, as it is apt to be attended with a displacement of the fractured ends of the bone. They are also liable to the objection that I mentioned in speaking of bandages applied to parts which have received serious injury—that is, when the limb is swelled in consequence of an injury, the pressure of the bandage becomes very considerable, so as to add to the irritation of the part, and it thus exposes the patient to the risk of more serious consequences; so that, generally speaking, you are to consider that the application of the circular bandage to a fracture is out of use. The 18-tailed bandage, and the bandage of Scultetus, are preferable; and the pressure which these produce sometimes assists materially in keeping the ends of the bone in proper apposition. It has also been found by many persons that the influence which bandages are capable of exercising upon the muscles of the limb tends to diminish the probability of spasm, or convulsive action—tends, in short, to keep the muscles quiet; in fact it is well known, when persons have warning of the approach of the spasm, if the limb be held with a firm pressure, the spasm will not come on while such pressure is continued; and the support of a bandage—the *eighteen-tailed bandage*, for instance—serves the purpose effectually. It is a part, therefore, of the dressing of fractures which ought to be attended to with great care.

Then with respect to the confinement of the bone, and maintaining it in a quiet state—this is to be accomplished partly by the position in which the limb is placed, and partly by those mechanical supports which are called *splints*. In each particular fracture you are to consider what the powers are by which the displacement of the fracture is likely to be accomplished, and you are to choose such position, as far as choice can be made, in which those powers will act with the least effect.

Now, in fractures of the lower extremities, particularly of the thigh, and also in some of the leg, it has been found that the half-bent position of the knee-joint is advisable, and that this is most easily accomplished when the patient is laid on a bed which admits of his having the trunk in a straight position, while, at the lower part, there is a double inclined plane, for the support of the limb. A bed of this kind, which is found very convenient in fractures of the lower extremities, where the patient cannot be moved without considerable pain and



having the position of the limb disturbed, has been invented by Mr. Earle: it is extremely convenient in many cases. It consists in a simple bed, like a common one, which is divided into two parts in the middle by a hinge, so that the upper part can be raised, to bring the trunk in a half-erect or an erect position. The lower part is also divided by a hinge, and it can be raised till it presents a double inclined plane. At the extremity of the lower half, there is a cross-bar attached for the feet, by which they may be supported. A similar bed has been devised by Mr. Amesbury, a gentleman who has paid great attention to injuries, particularly those of the lower limbs. The mechanical aid afforded by these beds is of material advantage in the treatment of fracture—the position of the limb, with reference to its power in maintaining the fractured ends in proper relation to each other, being made an especial consideration in their construction.

*Splints* are apparatuses made of substances more or less inflexible, capable of giving a degree of firm support to the limb. They are made either of wood or of japanned iron, or of pasteboard; substances that admit of the requisite degree of firmness, and may be accommodated to the figure of the limb. These are meant to surround the limb either in whole or in part, and, as it were, to encircle the member; they must, at all events, be sufficiently long, not only to embrace the fractured limb, but to extend beyond the joints that are connected to the upper and lower fragments of the bone. If they are to confine mechanically any particular bone, you must not apply the splints merely to the bone itself, but extend them to the two neighbouring joints, because the motion of either of these joints produces displacement in the fractured bone. In case of a fractured leg, the splints must extend beyond the knee in the upper direction, and downwards beyond the ankle-joint. In fact, in the lower extremities it is occasionally found necessary to have contrivances to confine the whole of the lower limb. You cannot keep the thigh in a proper position without embracing in the splints the whole of the limb, from the pelvis down to the heel. Now as those substances called splints cannot be immediately applied to a limb without rubbing and irritating the parts to which they are applied, you must protect the limb by padding—that is, by some soft substance, to take off the pressure; and, in fact, the inequalities in the limb require that something should be introduced to bring the limb as nearly as you can to one regular surface. By thus rendering the surface against which the splint presses quite uniform, you distribute the pressure over the limb generally, and prevent any considerable irritation of any one particular point. For this pur-

pose you have pads, which are made of tow, or carded wool, wrapped up in linen or flannel; or you put bran into bags, filling them about two-thirds, so that it can be pressed out into any shape; and thus you render it thicker in one part than in another, according to circumstances. The French (and it is generally said they are neater in their various dressings of fractures than we are) are in the habit of applying a substance for which we have no word in English; it is called *balle d'avoine*—consisting of the external husk of the oat, a kind of chaff. It is a very light substance, which, like bran, can be moved from one part of the pad to another, so that you can have the pad accommodated as the limb may require. The object, in short, is to have a soft lining to the splints, so that you may render the surface against which the pressure is applied general over the limb, and avoid excoriating the parts. Tow, lint, bran, and various substances of this kind, may be applied in particular instances, according to the exigencies of the case. Then having replaced the fractured ends of the bone in the way that I have mentioned, having covered the fractured part with a soap plaster, having applied an eighteen-tailed bandage, and then put on your splints, and lastly, having placed the patient in a suitable posture, according to the circumstances that I have mentioned to you,—you have done what is necessary for the treatment of a simple fracture.

I have already mentioned to you, that such injuries require a considerable period of time for their consolidation; that the temporary union, the provisional callus which holds the ends of the bone together, is not fully ossified before 40, 50, or 60 days, and that the definitive callus, or ossific consolidation of the broken ends of the bones themselves, does not take place till a much later period. The most perfect mode of treating a fracture would be, if it could be accomplished, when we have replaced the fractured ends of the bone, and have put on the apparatus that I have mentioned, to let the limb remain without any disturbance until it becomes firmly consolidated; in fact, if there is no external wound, if no particular circumstances occur, and if the apparatus is well applied, there is no necessity for undoing it till the consolidation is fully effected. In general, however, we are hardly fortunate enough to accomplish this. The patient experiences pain or uneasiness from some part of the apparatus—we undo it, and endeavour to remedy the inconvenience. We find, perhaps, that the ends of the bones are not exactly in apposition; we replace them,—and we continue these attentions as often as they are required until the consolidation is effected.

The diet of a patient—for the case supposes a person who is confined to his bed, and

using no kind of exercise—of course need not be very nutritious. In the early part of the case, we may reasonably expect more or less swelling and inflammation in the neighbourhood of the fracture; the patient, therefore, should be placed on light diet, he should not take fermented liquors at all, and very little, if any, animal food. But when the first few days have passed by, and the risk of inflammation is removed, he need not be restricted to so low a diet, although mild and light nourishment is the most proper throughout, except under particular circumstances. If any thing like inflammatory disturbance come on, of course reduced diet is requisite, together with other means necessary to check such disturbance. It is advisable to take care that the bowels do not become confined; but it is by no means advantageous, on the contrary, it is very inconvenient, to purge patients. There is much inconvenience in passing the evacuations, from the moving of the body, and the displacement of the bone consequent thereon; we, therefore, should not give aperients that act frequently, or irritate the bowels.

You will probably inquire what is the length of time within which fractures may be expected to be consolidated? Now it has been very generally stated, that this requires 40 days, or about six weeks. The time required, however, as we might suppose, *a priori*, will be different according to circumstances. We may state, perhaps, that the consolidation of a fracture will require from a fortnight to seven or eight weeks; it sometimes takes place in less than a fortnight in children, in whom the process of growth is extremely rapid. Thus fractures are readily united in children; indeed, you are surprised to see how soon the union is effected. In elderly persons you often find even at the end of six or seven weeks that the bones are not united, that they are quite moveable on each other, and are likely to require a much longer time for their consolidation. In general I should observe too with respect to children, we might fear that deformity would ensue from not being able, in many instances, to restrain them. The movements of these young subjects occasion a good deal of apprehension, but it is generally found that the fractures do very well. We cannot, perhaps, keep the splints on as tightly or as well adjusted as we could wish, and after a few days the little patients will be moving about in spite of all we can do to restrain them; but, I believe, they do not begin to move till they feel that they can do so without inconvenience to themselves, and when that is the case, I imagine their movements do not produce much injury to the parts, for we usually observe that fractures turn out very well in children.

## OBSERVATIONS

ON THE

## ANATOMY, PHYSIOLOGY, AND DISEASES OF THE CRYSTALLINE LENS,

*And their Treatment.*

BY RICHARD MIDDLEMORE.

*Structure of the Lens.*

THE crystalline lens is generally described as a double convex transparent body, situated partly within a cavity at the anterior part of the vitreous humour, in which situation it is fixed by the connexion of its capsule with the hyaloid membrane: in the adult state it has the consistence of soft jelly at its surface, gradually increasing in density as we approach its centre, where it possesses considerable firmness: after maceration it separates into equal parts, each of which is found to be lamellar, bearing a close resemblance to the layers of an onion.

Leuvenhoeck first observed the fibrous structure of the lens, and has entered into a very minute calculation respecting the number of layers which form it, and their mode of connexion with each other. Many, and very contrary opinions, were formerly entertained upon this subject, its anatomy being generally modified by some peculiar notions concerning vision. It must not, however, be forgotten, that many excellent anatomists, and amongst others, John Hunter, believed it to be muscular, and on that supposition accounted for the alteration of figure it was presumed to undergo in the inspection of extremely distant or proximate objects.

It has been said that the lens is not nourished by the circulation of blood through its substance; that no vessels for the purpose of circulating the vital fluid exist in it; that, in short, the lens is a secretion like the liquor morgagni, or the aqueous humour. When we refer to the circumstances of its growth and decay, its situation and its diseases, it would seem to be impossible for such an idea to be seriously entertained by any reflecting mind; but it is an undoubted fact, that such an opinion has been extensively prevalent, and is not at the present day by any means deserted. The crystalline lens is, in early life, small and soft; with increasing years it acquires volume and firmness; in ad-

vanced life it becomes, independently of any morbid action, smaller and harder, thus experiencing the same changes as other parts in their approach to maturity, their perfection, and their decay.

We find it floating in a fluid, suspended by minute and delicate threads, whereby its alterations of figure are readily permitted, without any corrugation or stretching of its capsule. We perceive its use, namely, the refraction of light, and naturally inquire why, if nerves need a vascular supply to enable them to convey sensations, is the same support denied to a part whose office it is to transmit and refract light? Again, if we examine its diseases, we may observe it undergoing change of consistence and figure, and other morbid alterations.

Zinn, Haller, Winslow, and many other celebrated anatomists, have seen blood-vessels ramifying through the substance of the lens, and have represented, or described their course and origin. Even Walther, who was anxious to disprove its circulation, professes to have seen, under circumstances of disease, vessels arranged in a beautiful wreath within it. This admission on the part of Walther must weaken our opinion of his accuracy, for it is contrary to all analogy to find a part retaining its life in the living system nourished in two modes at one and the same time; nor is it very reasonable to assume that a part can preserve its vitality by an organization different from that destined for its support. We can readily perceive how vessels may shoot into an effused inorganic mass, as lymph or blood, or into any other similar medium possessing sufficient firmness to support them, but unless we are prepared to believe that blood may become organized whilst flowing through its proper channels, we cannot justifiably allow the establishment of a circulation in a living part destined to receive and maintain its life by absorption; we cannot admit this change in the mode of subsistence of parts. We infer that the function of the lens produces the same exhaustion and loss as the conveyance of sensations occasions to nerves, and have consequently pointed out a necessity for some reparative process. If the lens does not receive blood-vessels through the medium of its enveloping membrane, how is it nourished? I know only of two modes which bear the

semblance of rational conjectures: I allude to absorption and secretion. The primitive secretion of the capsule (the liquor morgagni) has been said to constitute the support of its secondary secretion (the lens). I am not aware that any vessels similar to the absorbing system of vegetables has been found to exist in the lens, nor can I conceive how such a discovery can be made by those individuals (and they only can be desirous to make it) who have asserted that blood-vessels, from the circumstance of their minuteness, cannot be detected; and who, on this ground only, have sought out some other mode by which it could obtain its nutrition; such a position, therefore, is perfectly gratuitous, contrary to facts, opposed to analogy, and at variance with the general laws of nature. If the lens be supposed to be a secretion from the vessels of the capsule, we must admit that its disease ought invariably to precede that of the lens, the latter having no morbid action of its own. This, however, is not the case; we find one or other part diseased, just as alteration in its own circulation, or other causes, affect it. Again, upon this supposition, it must be removed and repaired, either by the transmission of particles through the liquor morgagni, or by the termination of vessels upon its edge. In the former case the effect of gravity would destroy, and in the latter, inequality of deposition and absorption would interfere with its circularity, and, consequently, with its functions. If we cede to the vessels of the capsule a power of propelling the particles through the morgagnian fluid, we acknowledge the existence of a process incompatible with minute and delicate vision; if we admit the termination of vessels upon the edge of the lens, and do not grant them an attachment there, we deny them that power of adjustment which is here indispensably requisite. Zinn, after having remarked that Petit denied the vascularity of the lens, and believed it to exist in a manner similar to that of vegetables, adds, "*sed recentiorum observationes ericerunt, vascula non solum, ad capsulam deferri, sed per illam ad interiorem lentis substantiam penetrare.*" He also remarks, (but omits to mention that Winslow's discovery took place in the eye of a fœtus,) "*sic ipse Winslowus affirmat, subtilissimas injectiones sibi aliquando sic successisse, ut vascula*



ipsam lentis crystallinæ substantiam penetrantia invenerit;" and joins to this testimony the opinion of Albinus, who discovered the vessels of the lens as they passed through its front and back surface. Haller and Moehringius saw and demonstrated vessels passing from the ciliary processes, and ramifying through the substance of the lens. The latter anatomist goes on to mention that more subtle and accurate injections have proved the existence of vessels arising from the artery of the retina, which first ramify upon the posterior capsule, plunging afterwards into the body of the lens; and, also, other vessels, which proceed from the inner to the anterior capsule, to be distributed upon its front surface. Senac saw an artery diffused through the lens in the eye of a horse; and the combined evidence of Camper, Senac, Albinus, and many other celebrated anatomists, would appear to render it certain that the front part of the capsule receives vessels from the ciliary processes, and its posterior surface from the central artery, which are thence distributed, with a miraculous minuteness, throughout the texture of the lens. Ruych, in his early experiments, denied the vascularity of the capsule and the cells of the vitreous humour: he says, on one occasion, "I have represented portions of the tunics of the vitreous and crystalline humours by a spot, not being able to exhibit them in any other manner, on account of their extreme delicacy, and their want of blood-vessels." In the succeeding volume of his works, we find, amongst others, figure 8, with this explanation: "Demonstratur humor crystallinus, vitulinus, eum ejusdem membranula ambiente, aranea dicta, per quam, plurimæ sunt disseminatæ repletæ arteriolæ." I am informed that he unequivocally acknowledged the existence of blood-vessels in the substance of the lens itself; but after a careful examination of his works, I cannot discover any distinct avowal of such a belief, although he has, on several occasions, expressed himself so ambiguously that it is almost impossible to decide what his actual opinion was. Sæmmering has given an admirable representation of the abundance and size of the vessels of the capsule, and has thus explained that representation: "Trunculus arteriæ centralis retinæ, qui per medium humorem vitreum ad capsulam usque lentis porri-

gitur, ubi ramulos stellatos seu radiatos quaquaversum dimittit, ita tamen, ut multiplici modo crassiores ramuli gracilioribus per vices succedant." Dr. Young and Mr. Hunter believed the lens to be muscular; and as they admitted no other mode by which muscles were nourished except by the circulation of blood, it follows that both those eminent men entertained upon this subject the popular opinion. Beer asserted that many cataracts arose from a slow insidious inflammation of the lens, and more particularly its capsule. That the capsule may inflame, and become opaque in consequence, is, I think, unquestionable; but, compared with the lens, it is a highly-organized part, and will bear a degree of excitement, a duration and severity of inflammation, which, without proceeding to a destructive extent, may terminate in loss of transparency. Mr. Bell believes that when the lens is in a natural state, it does not admit of the circulation of any appreciable quantity of red blood, but that when inflamed, blood-vessels may be easily distinguished. The latter assertion I believe to be incorrect, and shall beg leave to observe, that what Mr. Bell believed to be an inflamed lens was nothing more than an organized mass of lymph, or other adventitious deposition. After the most careful examination of the eyes of a variety of animals, in whom cataract has been occasioned by accident, (and wounds of the lens, would, I presume, be as likely as any thing to excite inflammation), I have seen no such appearance—no evidence of enlargement of vessels; whilst, in the cataract of old persons, such is the density of the lens that augmentation of their size could not possibly take place. Mr. Stanley, after having remarked that the capsule is nourished by a branch of the central artery of the retina, adds, that after a successful injection, a vessel proceeding to the substance of the lens may be observed. When speaking of the causes of cataract, I shall bring forward other evidence in favour of the vascularity of the lens. The office of the lens is, to refract the rays of light in their passage to the retina; but independently of the unvarying accuracy with which it produces this effect, it would appear to have the power of enabling the eye to adapt itself to objects which are either very near to, or distant from it. This effect is not, however,

occasioned merely by the alteration in the figure of the lens—the entire shape of the globe is capable of being changed by the action of its muscles. There is an evident necessity for some power by which the eye may be capable of varying its refractive power; and I know of no part which, by its alteration, is capable of producing this effect efficiently, except the crystalline lens. John Hunter believed the lens to be muscular, and Dr. Young has particularly described not only its muscles, but the tendons in which they terminate. His description (which argues either very great credulity on the part of a most learned and scientific man, or unusual powers of vision) is as follows: “After having premised the absolute necessity of an increased convexity of the lens when inspecting objects very near to the eye, he says, “the crystalline lens of the ox is an orbicular convex transparent body, composed of a considerable number of similar coats, of which the exterior closely adhere to the interior. Each of these coats consists of six muscles, intermixed with a gelatinous substance, and attached to six membranous tendons. Three of the tendons are anterior, three posterior; their length is about two-thirds of the semi-diameter of their coat; their arrangement is that of three equal and equidistant rays, meeting in the axis of the crystalline; one of the anterior is directed towards the outer angle of the eye, and one of the posterior towards the inner angle, so that the posterior are placed opposite to the middle of the interstices of the anterior; and planes passing through each of the six, and through the axis, would mark on either surface six regular and equidistant rays. The muscular fibres arise from both sides of each tendon; they diverge till they reach the greatest circumference of the coat, and, having passed it, they again converge, till they are attached respectively to the sides of the nearest tendon of the opposite surface. The anterior or posterior portion of the six viewed together, exhibit the appearance of three penniform-radiated muscles. The anterior tendons of all the coats are situated in the same planes, and the posterior ones in the continuations of these planes, beyond the axis. Such an arrangement of fibres can be accounted for on no other supposition than that of muscularity. This mass is enclosed in a strong membranous capsule, to which it is loosely

connected by minute vessels and nerves; and the connexion is more observable near its greatest circumference. Between the mass and its capsule is found a considerable quantity of an aqueous fluid, the liquid of the crystalline.” This is perhaps seeing more than is necessary: if a power of altering its figure be the aid of muscularity, elasticity, or any other means, as the stimulus of near or distant objects may require, be ceded, we have all that is requisite for our purpose, for the explanation of a phenomenon which has ever peculiarly distinguished the human eye, as in many respects the perfection of an optical instrument. The lens being situated in a medium which admits of its greater or lesser degree of convexity, without producing collapse of its enveloping membrane; being somewhat dense and laminated, by which its particles allow a certain extent of motion, whilst its firmness enables it to regain its original form, when the stimulus which excited it to action has ceased, and presents a resistance of structure sufficiently great to admit of the action of those powers by which this change is presumed to be accomplished; and being muscular, and possessing some property by which its degree of convexity may be increased or diminished, is enabled by the aid of the alteration on the figure of the globe, occasioned by the action of its muscles readily to adapt itself to the inspection of proximate or distant objects. I have said that the liquor morgagni enables the lens to move with freedom, and fills up the inequalities which would be left in the capsule whenever any alteration in its figure took place; that, when pressed from one part it readily flows into another, and presents that partial stretching and flaccidity which would arise (did not such a provision exist) from the change of form to which the lens is exposed; and this opinion is strengthened by the consideration, that in this part there is a much larger quantity of fluid, in proportion to its size, than in other situations where fluid is secreted merely for the purpose of assisting the free motion of parts upon each other.

#### *Diseases of the Lens.*

Cataract is the most important of all the diseases to which the lens is subject, and chiefly so on account of the frequency of its occurrence. By this term is generally understood,

at the present day, an indistinctness of vision, induced by opacity of the capsule or its contents. Beer, who has written admirably upon this subject, divides cataract into the genuine and spurious; under each of which heads he arranges many varieties, which are also subjected to subdivision; any peculiarity of colour or consistence, or any circumstance pointing out a singularity of appearance, being considered by him worthy of a name. This diffusive subdivision has not, in my opinion, any advantages, and cannot be considered a plan worthy of imitation, on account of the needless obscurity and difficulty it adds to the subject, and the little advantage we derive from it in our treatment of this malady.

I shall enumerate, as distinct forms of cataract, the capsular, the lenticular, and the capsulo-lenticular: the anterior, or the posterior capsule, may be separately, either partially or totally opaque, or both may have lost their transparency in a greater or less degree. In addition to this, we may have, combined with a partial or total opacity of the lens, any grade of opacity of either the anterior or posterior capsule, or both. The lens alone may be affected; and it more generally happens that lenticular cataract exists as a separate form of disease, than capsular. I know nothing of the morgagnian cataract as a distinct disease; if capsular cataract exist, the liquor morgagni is, I presume, very likely to become dull and turbid. Cataract has been distinguished by its colour, its consistence, its duration, and a variety of other unimportant circumstances: it has been said to be hard or soft, according as its density has been increased or diminished; green, or marbled, in accordance with a particular change of colour;—mature or immature, as indicating its incipient or fully formed state. Simple uncomplicated cataract may be distinguished from every other disease by its colour, its situation, the dimness of vision progressing with the increase of opacity; the activity of the iris, the absence of pain and inflammation; and, in its early stage particularly, by the variation in the power of sight, according to the size of the pupil. There are many unnecessary rules laid down for distinguishing cataract from other diseases, but in the majority of instances the distinction will be self-evident. If cataract takes place in advanced life, its

progress is generally slow: the patient complains of a mist before the sight, which is specially inconvenient in the middle of the day, when the sun shines brightly; objects appear smoky to the patient, but are more distinctly seen when placed in an oblique direction. If the iris be put under the influence of belladonna, and the lens be then examined, a somewhat dense spot, generally of an amber colour, will be seen in its centre, the circumference having only partially lost its transparency. No change in any of the other textures of the eye will be discovered; but should any defect of vision beyond what ought to result from the existing degree of opacity be present, an exceedingly attentive examination must be made, and the history of the case closely investigated; it will then very probably be found that amaurosis, glaucoma, or some other disease of the deep-seated textures, exists. Amaurosis is frequently preceded and accompanied by some alteration in the condition of the health, or pain in the head or eye-ball; its progress is occasionally very rapid; it occurs at all periods of life, and is not indicated by any want of transparency in the visual textures of the eye. Glaucoma generally arises from some obviously acting cause, which has been producing a slowly advancing inflammation of the cells of the vitreous humour; peculiar positions of the body; the long continued inspection of objects of the same size and colour; by working at a fire; or by continued study by artificial light. There is commonly some degree of pain in the eye; and on a close examination we find, situated deeply within it, a dingy green mass, with a cupped surface. We find, also, that there is no correspondence between the dimness of vision and the existing degree of opacity; the sight is injured more than it ought to be if the mere alteration of transparency were alone the cause. Amaurosis and cataract may be combined, or glaucoma may be joined with an opacity of the lens; the former, (amaurosis) or the latter (cataract) may be the primitive disease, or they may be coeval. If cataract be fully formed before these diseases commence, the difficulty of distinguishing them may be considerable; but an attentive investigation of the history of the case, and a close observation of symptoms, will, in many cases, guide us to a correct diagnosis. If a patient,



who has cataract in one eye only, complain of being unable to distinguish the light of a candle when the healthy organ is closed, after having been previously accustomed to distinguish a brilliant from a feeble light; and if, on a careful examination, we cannot detect any superficial inflammation, or any augmented opacity of the lens, or any other alteration to account for the change; and if the patient now complain of headache, or pain in the eye, and the opposite organ becomes somewhat dim, without any appreciable want of transparency; and if to these symptoms be added a tardiness not previously noticed in the action of the irides, the nature of the case is sufficiently obvious. If, instead of amaurosis, glaucoma should supervene, the diagnosis would be increased difficulty; for as we cannot inspect the part we presume to be diseased, and as the symptoms are necessarily imperfect and obscure, our opinion must be the result of inference, partaking, in many of these cases, more of the character of feeble conjecture than confident certainty. In such instances (if one eye only be affected) I have found the degree of dimness increased, but vision has not been quite destroyed: the patient will say, I can see an indistinct glimmering, but the perception of light is weaker than formerly. Should the opposite eye be found affected with glaucoma, the source of the mischief is more certainly discovered. If amaurosis or glaucoma be the primitive disease, we shall have the peculiar history of each; and during the progress of the cataract the sight will be equally, or almost equally dim. It is not requisite to say any thing about the means of distinguishing this disease from lymph effused upon the capsule from iritis or choroiditis: a turbid condition of the aqueous humour, or purulent effusion into the anterior chamber; they cannot, I think, be confounded by any person possessing the slightest knowledge of diseases of the eye. The time occupied in the production of cataract is extremely variable: if it take place as the result of local injury, its progress is miraculously rapid; if it arise in the middle period of life, it is somewhat quickly matured; but in advanced life it is very slowly formed, for reasons which will be presently explained: we cannot, indeed, affix a limit to the time the formation of cataract may occupy. In old persons

we find the opaque lens generally of an amber or green colour, particularly in its centre; whilst in early life it is usually white, chiefly in consequence of its lesser degree of density and volume at that period. An opaque spot is occasionally observed in the centre of the lens, a defect sometimes congenital, and more rarely the product of disease; I have never seen it produced by accident. Perfect opacity of the centre of the lens, whilst its circumference retains its entire transparency, is never occasioned by accident, as far, at least, as I have had an opportunity of remarking such an appearance.

I have not observed that endless variety in the consistence and colour of cataract which has been noticed by others: in youth it is generally of a white colour and soft consistence; in old age it has an amber or a greenish tint, and a firm consistence. The healthy lens is characterized by the same grades of firmness at the same periods of life; the variations from these states are too unfrequent to justify any division grounded on the anomaly. When speaking of the varieties of cataract, I acknowledge, as separate and distinct forms of the disease, the capsular, the lenticular, and the capsulo-lenticular. If the anterior capsule only become opaque, it is characterized by its convex figure, its proximity to the concave surface of the cornea, and its radiated or striated structure, or a peculiarly white and uniformly glistening appearance. When this radiated appearance exists prior to any extension of the affection, a quantity of light readily passes through the divisions—the striæ of the capsule, and the patient may have even more than a confused perception of objects. But other parts generally participate in the mischief; the posterior capsule and the lens sooner or later become subject to the same change. When the posterior capsule has lost its transparency, it is distinguished by its shining concave surface and comparatively deep situation: like the former disease, it soon merges into the capsulo-lenticular. Lenticular cataract presents a dense convex aspect; it is situated neither so deeply as the latter, nor so superficially as the former; its centre is of a higher colour than its circumference, and it has no shining surface. To these points of distinction must be added the variable power of vision according to the size of

the pupil, a circumstance seldom if ever noticed when the capsule only is opaque on account of the uniformity of the opacity, the circumference and centre being equally affected in capsular cataract. If this disease arise from accident, it is whiter and softer than when produced in the ordinary way; and is not uncommonly absorbed, being first softened by the liquor morgagni, if the wound in the capsule become quickly closed, (if it be very small this may happen), or, more effectually, by the aqueous humour, if it remain open; and, secondly, absorbed either by the absorbing surface of the capsule, or of the chambers of the eye.

[To be continued.]

### CHRONIC HYDROCEPHALUS.

*To the Editor of the London Medical Gazette.*

SIR,

At a time when the attention of the profession has been particularly directed to the subject of chronic hydrocephalus, by the successful issue of the cases which Dr. Conquest has brought forward, I cannot but think that any thing relating to the subject will afford some interest. From this feeling, and from a conviction that the propriety of puncturing the head in these cases, can only be decided by experience, and that proper experience can only be obtained by a careful comparison of a number of cases, it is that I am now desirous of laying the following case before the profession. Although unsuccessful, I am by no means inclined to attribute the unfavourable termination of the case to the effects of the operation; on the contrary, I think the appearances on dissection fully warrant the opinion, that death would very soon have taken place, if not as soon, had the operation not been performed. That the mere puncture was not the cause of the fatal termination, or of the appearances after death, I also think is pretty satisfactorily proved, by the fact, that no unfavourable symptoms, no symptoms of inflammation, were discoverable until sixty hours after it had taken place. In the account of the post-mortem examination, it will be found that

a slight blush of redness existed around the puncture, but this was strictly confined to the pericranium, the membranes below being entirely free from the least appearance of inflammation; indeed in this, as in every other part, they were unnaturally pale. To what, then, can be attributed the fatal termination? Certainly not to any inflammation induced by the operation, but rather, I should say, to the previous disorganized state of the brain,—a state which, I am fearful, obtains in a great majority of cases, when far advanced. If this view of the subject be correct, it should make us exceedingly cautious in the choice of the cases for operating on, otherwise that which, when used with due caution, may yet be found to be a valuable mean of restoring a fellow creature to health and usefulness, may be productive of much mischief. In the present instance, the operation was not recommended without duly considering all the circumstances connected with it, nor without the firm conviction that it offered the only chance of relief. I had hoped, that from the favourable state of the child's health, and the absence of symptoms denoting any extensive disorganization of the brain, that there was a fair chance of success; in this, however, I was mistaken, which I shall regret the less, if the present failure shall have the effect of inducing a proper degree of caution in those in whose charge cases of this description may fall.

For the opportunity of watching the following very interesting case, I am indebted to my friend, Mr. Waterworth, of the New Kent Road; from whom I also obtained an account of the early symptoms. I have been unwilling to occupy more of your valuable space than necessary, and have therefore endeavoured to give as short an account of the case as possible, without omitting any thing important.

I am, sir,

Your obedient servant,

STEPHEN HALL, M.D.

Walworth, May 17, 1830.]

CASE.—E. W. æt. 16 months, at about the age of three months was attacked with convulsions, arising without any very evident cause, and unattended by the usual symptoms of acute hydrocephalus. After a time these convulsions subsided, and the infant remained well until the period of teething,

when they again returned with greater force; always being much aggravated on the appearance of a new tooth;—but between these periods she appeared to suffer no pain, and was cheerful. Shortly after the recurrence of the convulsions at the commencement of teething, it was observed that she had lost the power of the left arm and leg, although these parts continued to be as well nourished as those on the right side. The head was originally large; but from the first attack of convulsions it was observed to increase rapidly in size to the period when I first saw it (February of this year), at which time the greatest circumference was twenty-three and a half inches; whilst another measurement, taken from the upper part of the ala of one ear over the top of the head, to the same part on the opposite side, gave fifteen inches. She now appeared to have suffered very little in health; the body was alike plump both on the paralyzed and sound side, the appetite good, and she slept quietly. There had been no convulsions for some time; the pupils were dilated, but contracted on the admission of light; and there was occasional strabismus. The bowels had all along been torpid, and still continued so.

It appeared to us that this was a fair case for trying the effects of tapping; and as it seemed to afford the only chance of permanent relief, the operation was proposed. The consent of the parents was not given till about two months after this, when I again saw the child (May 1st), and found it exactly in the same state as above described, except that the head had greatly increased since my last visit; the greatest circumference being now twenty-six inches, and the measure across the top of the head, between the points before-named, having increased to eighteen inches.

The next day (May 2d) I met Mr. Waterworth at the residence of the child, in company with Messrs. Clarke and Franks. Mr. W. had provided himself with a sharp-pointed, flattened, straight needle, which gradually became broader towards the part attached to the handle; having a groove on one side, gradually increasing in size in the same manner as the needle. The child being placed on the nurse's lap, with a linen bandage round the head, the needle was passed into the anterior fontanel, about

half an inch to the right of the longitudinal sinus, and immediately adjoining the inner angle of the right frontal bone, in a direction slanting backwards, and there retained. The needle entered about an inch and a half, or two inches, and through the groove a clear fluid continued to flow in a small stream, until two ounces and a half had passed out. A considerable degree of collapse now came on, unaccompanied, however, by any convulsion; when the needle was withdrawn, and a little ammonia in water was given. In a short time the child began to revive, and there was evidently an inclination to sleep. Before we left, the bandage round the head was tightened, and another placed over the now depressed fontanel, passing behind the ears, and under the occiput; after this the child was placed in the cradle, the room was ordered to be darkened, heat to be applied to the feet, and cold spirit lotion to the head, and the most perfect quiet enjoined. When we left, the water was still running from the opening.

On the day after the operation, it was found that she had had some hours quiet sleep immediately after we left, from which she awoke refreshed, and appeared to the father relieved. She had passed a better night than usual, and was cheerful; there had been no convulsion nor unnatural heat; the pupils were dilated, but sensible to the influence of light; the pulse was quick; she had passed no motion, and very little urine, since the operation. She was ordered to renew the use of the calomel and squill, and to take some castor oil, by which the bowels were relieved, and the urine flowed plentifully.

No untoward symptoms manifested themselves, either on this or the following day; but on the morning of the 5th (the third day after the operation) violent convulsions came on, and continued to recur at short intervals until early the next morning, at which time she died.

*Inspectio Cadaveris.*—On removing the scalp, a slight inflammatory blush only was observed on the pericranium, surrounding the spot at which the instrument had entered, of about an inch in diameter. A large quantity of fluid could be felt fluctuating within the membranes in the course of the separated sutures, the greatest part of which was let out by puncturing the mem-



branes at the anterior fontanel, after which the cranium was removed without losing any of the fluid. When the brain was exposed, it was found exceedingly soft and flabby, the two hemispheres more resembling empty bags than those parts in a natural state. A vertical incision was first made along the centre of the left hemisphere, from before backwards, which laid open the whole length of the ventricle on that side, enormously distended: the walls, although pale and very soft, were firm compared to those of the opposite side; there was also very little blood in plexus choroides. The thickness of the cerebrum above this ventricle was no where more than the third of an inch, and in many parts not so much. On opening the right ventricle, no trace of the original conformation could be discovered; the whole substance of the brain surrounding it was softened down to the consistence of cream or pus, and in many parts nothing but a membranous bag could be found. On the floor of the left ventricle the parts were with difficulty recognised; whilst on the right it was utterly impossible to do so, so completely were they disorganized. The base of the brain and cerebellum appeared healthy, and tolerably firm. Very little blood was found either in the vessels of the brain or membranes. The fluid found in the head measured exactly a quart: neither this, nor the fluid which was drawn off during life, coagulated on the application of heat.

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#### DUTY ON THOSE ENTERING THE MEDICAL PROFESSION.

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*To the Editor of the London Medical Gazette.*

SIR,

I HAVE long entertained the opinion that no measure would so effectually tend to heighten the respectability of our profession, as the imposition of a duty on those entering it. I have long watched for an opportunity of canvassing this question in public, and have constantly agitated it in private, among my own immediate professional acquaintances; hoping that some person better qualified to command attention might bring the subject on the tapis.

But as the heads of the Government

have now taken into consideration a tax of a nature not altogether different, I think the present opportunity too critical to be lost for the want of a better advocate, and shall therefore submit to you some of the more cogent reasons that have influenced me in forming this opinion.

I suppose there are very few so absurd as to maintain that the members of our profession are not at present very numerous. It is a common observation, that every third or fourth house belongs to an apothecary or surgeon. The fact is so obvious that I need not waste time in attempting to prove it, therefore I shall at once proceed to shew that this is an evil of the greatest magnitude, and exerts a most baneful influence on the profession and public in general; a point not quite so clear, perhaps, though equally true. If the number of practitioners is great, it follows that the patients which fall to each individual's share must be few; and as the profits are in an exact ratio to the extent of their business, the individuals generally must be poor. It is from this cause that medical men are ill paid; not that the public are not sufficiently liberal, but that each practitioner has too few patients to occupy his time and yield him that remuneration which would place him in his proper sphere of society.

Such is our case; but the public suffer equally with ourselves. It was long ago demonstrated that too many attorneys were a great evil; business became so divided, and profits so reduced, that persons of respectability would not enter this profession; therefore property became entrusted to a class of persons of equivocal character, and much imposition and fraud were the results. We have the charge of the lives, in the same way as the attorneys have the care of the property of the citizens of the state; and in both cases probity as well as talent is requisite, and the more so among the practitioners of physic, since it must be confessed that the public, however enlightened by a modern course of education, are yet too ignorant of the mysteries of our art to form a correct estimate of the qualifications of those whom they employ in this department.

When a person without property attempts to study medicine, obstacles beset him at every step; in the first place,

he is obliged to abridge the time required to learn the science within the smallest compass that our chartered bodies permit, and too frequently certificates are obtained for an attendance on lectures and hospitals that has been, in truth, merely nominal: for instance, some time since, when I was about to engage an assistant, he wished to stipulate to be allowed to shew himself (that was his phrase) for an hour, once a week, at an hospital, to which he had entered himself a student. This young man might be very studious, and desirous of acquiring a knowledge of his profession, but how was it possible that he should ever attain it by such a proceeding? he might, indeed, have been able to scrape together from the various manuals that are published, a sufficient quantity of verbal information to pass a verbal examination; but how would he act when brought to the patient's bedside? perhaps, in the first instance, he might be tempted to confess his ignorance, but finding that disgrace alone was the reward of his candour, he would next consider how he should gain a livelihood. The answer to this question is what I fear but too frequently happens: finding that it will not answer his purpose to make such a confession, he begins by making his patients believe, that he understands the nature of their complaints; the next step is, to make himself believe that he knows as much as any other person,—this belief, so flattering to his vanity, very soon gains credence, and thus confidence being added to ignorance, the door is shut against any further improvement.

Now, sir, it is not the present tax that can obviate this mischief; but let a stamp duty, not of a trifling ten pounds, but of one or two hundred, be placed on the articles of indenture, and we shall at once strike at the root of the evil, by preventing those who have not the means from ever attempting to enter the profession. The apprentice would then be a person qualified by previous education for the more arduous studies of our science; he would come to it with a mind inured to patient investigation, and well stored with that knowledge of the dead and living languages, which undoubtedly will greatly facilitate his progress. After the term of his apprenticeship was expired, he would have the means to attend an hospital,

devoting his whole time to it, and not merely paying it a casual visit once or twice a week, as is too often the case at present; and he would be enabled to do this just as long as might be necessary to teach him all that he ought to understand, and not for the precise term prescribed by the College of Surgeons or the Apothecaries' Hall.

If this were carried into effect, multitudes would be prevented from embarking in this profession, and its numbers would be so far diminished as to allow each individual, with common diligence and application, to obtain a sufficient share of practice to yield him an honest independence, which, together with his improved education, would afford the public the best security for his integrity and ability.

I am, Sir,  
A SURGEON AND APOTHECARY,

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#### ANALYSES & NOTICES OF BOOKS.

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“ L'Auteur se tue à allonger ce que le lecteur se tue à abrégé.”—D'ALEMBERT.

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*Analysis of the works of Dr. S. Smith  
and Dr. Tweedie on Fever.*

[Continued from page 310.]

#### ART. III.

##### OF THE THEORY OF FEVER.

OUR author's theory of fever will appear from the following summary, given in his own words:—

“ The immediate cause of fever is a poison, which operates primarily and specifically upon the brain and the spinal cord. The diseased state into which these organs are brought by the operation of this poison, deprives them of the power of communicating to the system that supply of stimulus which is requisite to maintain the functions of the economy in the state of health. The organs, the seats of the functions, deprived of their supply of nervous influence, become deranged, the derangement in each taking place in a fixed order, and in a determinate manner. Subsequently to the nervous and the sensorial, the organs the next to suffer are those of the circulation; then

those of respiration; and, ultimately, those which belong to secretion and excretion. The condition of the nervous system which produces this derangement in this circle of organs, occasions further, in that portion of the circulating system which consists of the capillary bloodvessels, that peculiar state which constitutes inflammation; hence, inflammation is almost always established in one or more of the organs comprehended in the febrile circle, and sometimes in all of them. The peculiar and primary affection of the nervous system, which is here assigned as the cause of inflammation, does not become identical with inflammation, but superadds the morbid condition of inflammation to its own; does not lapse into or terminate in the inflammatory state, but accompanies it, and by this combination modifies in a peculiar manner the inflammatory process."—P. 346.

Differing from Dr. S. in so many respects as we have done, we are truly glad of the opportunity to concur with him in the opinion, that the brain and nervous system are the organs first ostensibly affected in fever, and that most of the phenomena and events which subsequently present themselves, arise out of this affection; but we are not prepared to say with him, that the poison of fever operates primarily and specifically upon the brain. This opinion of our author is not upheld by proof, nothing being advanced in support of it; it is, indeed, a bare assertion. Had he intended seriously to maintain this doctrine, it would have been incumbent on him to shew that a poison conveyed by the atmosphere acts directly upon the nervous system, but the subject is not even discussed; and what is singular, he supplies, in another part of his work, a formidable evidence against his own opinion, and in favour of the poison of fever acting primarily upon the blood; for at the conclusion of the chapter "Of the Remote or Predisposing Causes of Fever," he gives a very interesting account of some experiments performed by Dr. Potter, which testify, in the most unequivocal manner, that in persons exposed to the poison of yellow fever, the blood becomes in a morbid condition, while to external appearance and inward feeling these persons were in sound health; and moreover, that this morbid blood could in no respect be distinguished from the blood of those who

laboured under the most intense forms of the prevailing fever.

"In these experiments the blood in six persons indicated the operation of the morbid cause, while each remained in a state of apparent health. Of these six persons four were actually seized with yellow fever during the prevalence of the epidemic; and the other two, though they escaped any formal attack, did not escape indisposition. The diseased blood was of a yellow or of a deep orange colour, and a portion of the red particles was invariably precipitated. This blood was compared with blood drawn from an equal number of persons who dwell on the hills in Baltimore country, where the atmosphere was unquestionable pure; the serum in these instances was neither of a yellow, nor of an orange colour; there was no red precipitate; the appearances were such as are found in the blood of persons in perfect health."

For consistency-sake, the Doctor should not have brought forward this posing contradiction to his frequent assertions, that the poison of fever acts primarily upon the brain, and that there is no evidence of a morbid condition of the blood in fever!

The observations on the non-identity of fever and inflammation are very apposite; not so, however, are those on the subject of inflammation as connected with fever. After some laboured reasoning upon facts which are partly unquestionably, partly assumed, our author concludes "that the second event that takes place in the morbid series constituting fever, is inflammation."—p. 338. In arriving at this conclusion, the Doctor has evidently experienced great embarrassment, which could not but be the case with any one who, like himself, has indiscriminately put down whatever morbid changes he may have met with as having occurred during the fever. The basis of his opinions rests unquestionably on the dissections detailed in the work, which we have shewn are not satisfactory as relates to fever. In fact, the Doctor does not discriminate between the lesions of diseased action prior to the fever, and those which take place during its progress: and concluding as he does that all the changes of structure, and all the new products which he has met with in his dissections at the Fever Hospital, have been generated during the fever, and inflammatory ac-



tion being a necessary agent in these changes and products, the origin of the author's opinion, that inflammation was the "second event," becomes sufficiently apparent. But what will be said of those numerous cases of protracted fever in which the patients recover without any of the consequences which are known to succeed organic inflammation, as lesion of function? What will be said of those protracted cases which eventually prove fatal, and in which the organic changes and morbid products are trivial, or only what are found under the ordinary circumstances of a lingering death? What will be said of cases in which the patient has met with an accidental death during the height of the fever, and yet dissection revealed no organic inflammation or disease\*? Why the unavoidable inference is, that inflammation is not a necessary event in any case of fever, but that it may be an accidental adjunct or accompaniment.

There are two exceptions to the Doctor's theory which he anticipates, *viz.* "the very mildest and the very severest forms of fever" in which inflammation is not the second event, there being no indication or proof of its existence. These exceptions cannot be got over—they are millstones about the neck of the theory.

The Doctor agrees with some other recent authors, that the inflammation is modified by the state of the nervous system, and to this position we can add our support.

The function which comes next under notice is the respiratory, which the Doctor affirms must become involved as a consequence on the derangement of the circulating system, and that "the function of respiration cannot be materially deranged without producing a morbid condition of the blood," and that disordered secretion and excretion must attend the derangement of the systems before mentioned. There is here some indistinctness, and no detail as to the manner in which the respiratory function becomes deranged, but as pathology is referred to as demonstrating the fact, the reference must of course be to the bronchial affection, which is the ground Dr. Armstrong rested upon in his explanations of the

morbid condition of the blood, and it would have been more candid in Dr. Smith to come boldly forward as an approver of Armstrong's doctrine, than beat about the bush to arrive at the same end. We ourselves do not approve of the explanation of Armstrong, believing that the blood is much earlier affected, and that whatever bronchial affections there may be, it acts only as a secondary cause.

We quit theory to say a few words in commendation of the succeeding chapter on the causes of fever, in which are collected and well put together some very interesting particulars relative to the origin and generation of the poison, which is now well ascertained to be the cause of fever in various climates. Our readers will peruse this account with much gratification and profit, as we have done ourselves, and we regret that the matter does not admit of condensation in the form of an abstract. The author's opinion is pretty decided as to the generation of the poison being from the decomposition of animal rather than of vegetable matter.

#### OF THE TREATMENT.

The consideration of the last chapter will detain us longer, as our sentiments are much at variance with Dr. Smith's on the subject of the treatment. In the composition of this chapter the author has put forth all his strength; his mind is on the stretch, and his imagination glowing; and no wonder we should have a production truly Quixotic, the subdual of inflammation being the object of his chivalrous exploits.

It is not enough to paint his opinions in strong colours; they must be supported and enforced by digressive similes and illustrations: the sober language of science is not in concert with our author's fervour; the figurative epithets of poetry, and the sounding polysyllables of declamation, are alone congenial. In this strain we find him speaking of "*precious moments*"—"the golden opportunity"—"*a masterless enemy*"—"obtaining the victory"—"*promptly*"—"boldly"—"*most imminent risk*"—"a disease of *frightful power*"—"nurtured to maturity"—"*the most extreme caution*," &c. &c.

\* Such a case is recorded by Andral or Louis, we forget which.—*Rev.*

After a few preliminary observations,

Dr. S. affirms, that "the only morbid condition of fever, of which we have any knowledge, and over which the medical art has any control, is that of inflammation," p. 376; and "the object to be aimed at in practice, then, is clear: it is to prevent, or to remove inflammation." p. 379.—"If excitement be set up in an organ which has as invariable a tendency to terminate in inflammation as a stone to fall to the ground, what is the proper remedy to prevent the transition of excitement into inflammation? Bleeding," p. 380.—"Bleeding in fever cannot be performed too early. The very first moment of excitement, could that be discovered, is precisely the moment when the employment of this powerful remedy would produce the greatest effect." p. 382.

We cannot call to mind any work, the perusal of which requires more caution in investigating the grounds on which a position is advanced than the one before us. We may take the opportunity of reminding our younger readers to look well, on all occasions, to the materials which form the basis of any principle laid down, because an author may steal a march upon them by dexterously arriving at a certain position, which, being once obtained, all that follows comes as a matter of course, and in so fair a garb that it cannot but be admitted. In the present instance, for example, Dr. Smith insists that inflammation is the second event in fever, and for the proof of the existence and ravages of inflammation, he refers to the "hundred cases," in the greater part of which it is manifest that inflammation has been the active agent in organic change and destruction. If the reader inquires under what circumstances did this inflammation take place, Dr. Smith's answer is, fever. We will do the Doctor the justice to believe that this is his own sincere opinion, and as such he urges it upon others; and this opinion, once admitted, it follows legitimately that blood-letting is the best means of averting or subduing such inflammation. We trust our readers are already disposed to call in question, if not to reject the position of inflammation advanced by Dr. Smith, from the facts and arguments we have already adduced in other parts of this review, but the point is one of so much consequence that we feel it our duty to pursue the subject further.

Is inflammation, then, so invariably

the second event in fever as our author affirms? We answer, no. Are the consequences of inflammation, when it does occur, of so serious a nature, and is it of such an intense character generally as our author affirms? We answer, no. And, in accordance with this answer, we further add, that blood-letting is not called for so frequently, or to the extent that Dr. S. recommends.

We have admitted that inflammation was the active agent in producing the organic changes exhibited in the "hundred cases," but we deny that such inflammation existed, or that such changes took place generally during the course of the fever, and for the following reasons. The Doctor admits "that febrile inflammation, and ordinary inflammation, are not identical;" that "febrile inflammation is a modified inflammation, the modification consisting in less activity in the vascular system, and greater depression in the nervous." To these opinions we subscribe most fully, but we ask, can this febrile inflammation, with less activity in the vascular system and greater depression in the nervous, give rise to the same morbid products and changes as ordinary inflammation, which consists in greater activity in the vascular system, and no depression in the nervous? Certainly not, or else the nervous and vascular systems have nothing to do in determining the products of inflammation. The products of febrile inflammation, then, must differ from the products of ordinary inflammation, which no one can doubt who has studied pathological anatomy. But what says our author in another part? "Almost every change of organic structure which inflammation is ascertained to be capable of producing, is found to take place in fever; almost every product which inflammation is ascertained to be capable of forming, is observed to be generated in fever," (p. 338). Here this modified inflammation is said to be capable of giving rise to all the changes and products of an ordinary inflammation, which is impossible.

This erroneous opinion of our author arose from considering all the morbid products and changes which he found in persons who died of fever as having taken place during the course of that fever, and as being consequently the result of the modified febrile inflammation; whereas many of those products and

changes were the result of an ordinary inflammation at some time antecedent to the attack of fever. For example, if a person has an attack of pneumonia, which leaves one or more lobes of the lungs in a state of hepatization; and if this person in a year or two afterwards has an attack of fever, of which he dies, this hepatization would be considered by Dr. Smith as having occurred during the fever, and, consequently, as being the product of the modified febrile inflammation; whereas it was the product of an ordinary inflammation at a former period. Here is the grand source of error on the part of our author, which has led him to believe, and to affirm, that inflammation is invariably the second event; and then comes the dangerous inference, that bleeding is the remedy. No instance can better exemplify the caution which should be used in making good the ground as we proceed in our inquiries; for one error at the outset is fatal to all that follows, and is dependent or erected upon it; it is building a house upon the sand.

Under the unfortunate conviction that inflammation is the great enemy to be mastered in the treatment of fever, and that bleeding is the only means, our author proceeds to urge the use of this remedy rather by reasoning and inference than by practical evidence.

After recommending the abstraction of blood in the first moment of excitement, as we have quoted, Dr. S. goes on to observe:—"When inflammation has actually come on, there is then not a moment to be lost; that inflammation must be stopped; the accomplishment of this object is the great end which the practitioner should aim at in every thing he attempts; until he has done this, he has done nothing; until he has done this, he ought to give neither sleep to his eyes, nor slumber to his eyelids; until he has done this, he ought to feel that there should be no rest for himself, because there is no safety for his patient. Until the inflammation is subdued, blood must be taken, be the quantity it may be necessary to abstract, in order to accomplish this object, what it may; be the bleedings it may be requisite to repeat what they may, the vein must be allowed to flow, and it must be opened again and again until this object is secured. If this golden opportunity be allowed to escape, and this object be not obtained, the risk is most immi-

nent."—p. 382. What does all this preaching mean? Does the Doctor forget that he is addressing his professional brethren? or does he suppose they are to be led away by the effervescence of his heated imagination? Is the Doctor ambitious to play over again the farce which was played by his predecessor, Armstrong? Where are the instances of inflammation in fever which run their course, as the Doctor would lead us to believe, as swiftly as the cholera of India, or are as quickly fatal as a strangulated hernia? One would suppose that fever patients were apt to be cut off in twenty-four hours by an inflammation! What is the fact? what is the evidence of practical and sober-judging physicians? Why that generally speaking a moderate abstraction of blood only is necessary, and that the inflammations attending fever are, for the most part, of a subacute, and rarely of a violent character. Such are the sentiments of Stoker, Bright, Burne, and many others.

Now after extolling bloodletting in this vehement manner, our author, thinking probably he may have gone too far, begins to draw in his horns (how like Armstrong!) by saying, "That after all, the quantity of blood it is necessary to abstract is not large;" and that "smaller bleedings will subdue febrile than pure inflammation."—p. 384. This brings to mind the trick of Lord Byron, in his beautiful poem, *Don Juan*, where, after having worked up the feelings of his readers to the greatest point, he turns round and laughs at them.

Our readers will scarcely be prepared to learn, that, notwithstanding what the author has urged on the necessity of bleeding to subdue febrile inflammation, he confesses that blood-letting has little or no control over the thoracic and abdominal affections. He says, "in the severe bronchial affections of fever, blood-letting is of little avail. It seems to have scarcely any control over the peculiar affections of the lining membrane of the bronchial tubes, or even over the inflammation of the substance of the lining, which so often accompanies the intense form of thoracic disease." p. 403. And also, with respect to the abdominal affections, he says, "general bleeding has but little influence over the disease." p. 405. So that, of the three affections—the cere-



bral, the thoracic, and abdominal—the nature of all of which is *inflammation*, *two* of them are not controlled by bleeding. How are these contradictions to be reconciled? Is, then, the cerebral affection the only one to which all the earnest recommendation of blood-letting is applicable? If so, the author leaves us at a loss even here to assure ourselves what are the indications which assure us of the existence of the cerebral affection; seeing that, in the case of Potter, which he considered to be an intense cerebral affection, the brain was found on dissection to be healthy!

After blood-letting, all other remedies sink into insignificance. Calomel and rhubarb, as well as castor-oil, are mentioned as proper purgatives. Wine and brandy are allowed when life is fast ebbing; and opiates under particular circumstances. The treatment at the Fever Hospital appears to continue much as Dr. Armstrong established it; a routine of bleeding, rhubarb and calomel, and castor-oil. We hasten to conclude this long analysis, of which our readers as well as ourselves are, we dare say, heartily tired, by some observations on Dr. Dill's extraordinary case, which probably has no parallel in the records of medicine.

The case of Dr. Dill demands our most serious attention, and deserves that of our readers. It is adduced as an example of severe cerebral affection; in which cases, Dr. S. affirms, "the bleeding must be proportionally large and early as it is copious."

"I saw him," says Dr. Smith, "*before* there was any pain in the head, or even in the back; while he was yet only feeble and chilly. The aspect of his countenance, the state of his pulse (which was slow and labouring), and the answers he returned to two or three questions, satisfied me of the inordinate, I may say the ferocious attack that was at hand." p. 398.

Whatever may be the opinion of our readers, as to the above signs indicating a ferocious cerebral attack, they will one and all agree with us, that the ferocious attack was met by a ferocious treatment; for an emetic was given without delay, and "blood was taken from the arm to the extent of *twenty* ounces." This blood was not inflamed. Severe pain in the limbs and loins, and intense pain in the head, came on during the night, and early in the morning

blood was again drawn to the extent of *sixteen* ounces, "with great diminution but not entire removal of the pain." Towards the afternoon he was again bled to *sixteen* ounces: "the pain was now quite gone; the blood from both these bleedings intensely inflamed."

During the night the pain returned, and in the morning, notwithstanding the eyes were dull and beginning to be suffused, the face blanched (no wonder!) and the pulse slow (?), and intermittent and *weak*, *twelve* leeches were applied to the temples, and as these did not entirely remove the pain, more blood, to the extent of *sixteen* ounces, was taken by cupping. This operation afforded great relief, but the following evening the pain *returned*, and again was blood abstracted to *sixteen* ounces. "Immediate relief followed this second operation; but *unfortunately* the pain *returned* with great violence towards evening, and it was now impossible to carry the bleeding any further." Typhoid symptoms now began to shew themselves, "the fur on the tongue was becoming brown, and there was already slight tremor in the hands." What was to be done? Ice and evaporating lotions were of no avail; but happily for Dill, the affusion of cold water on the head, "the cold dash," was thought of and employed; and this being effectually applied, "the relief was instantaneous and most complete." So that this case, announced as a severe cerebral affection, and treated in anticipation by copious blood-letting, *before there was any pain in the head, while the patient was yet only feeble and chilly*, which grew worse and worse as the blood-letting was repeated, until, after the abstraction of *ninety* ounces of blood, the patient had become in "a state of intense suffering" and "imminent danger," and was relieved at last by "the cold dash"; this case, we say, is brought forward as a specimen of the extent to which copious bloodletting may sometimes be required!!! Most sincerely do we congratulate Dr. Dill on his escape, not from a dangerous disease, but from a dangerous remedy.

Now in this case the Doctor had a fair, a "golden" opportunity, of carrying into effect the precepts he enjoins as to early and copious blood-letting; and what was the result?—not an effectual relief, not even a mitigation of the symptoms! On the contrary, intense

pain in the head followed the first bleeding, and after every abstraction of blood the patient grew worse and worse, till at length he was brought to a "state of imminent danger" and "intense suffering;" *to a state in which, "without the aid of some powerful remedy, the case was lost!"* Typhoid symptoms had begun to shew themselves, and no more blood could be taken with safety. But how does this tally with the rules of treatment laid down only a few pages before?—where the repeated abstraction of blood is urged "until the pain, wherever seated, be entirely removed;" where it is said, "nothing is more common than the appearance of typhoid symptoms on the second or third day after bleeding has done nothing but lessen the inflammatory action; whereas, had it been carried somewhat, and generally only *a little farther*, the patient would have been convalescent at the very period when his dangers becomes most imminent." p. 386. The case before us was precisely the one in which, in conformity with the Doctor's own injunctions, blood-letting should have been carried "*a little farther*," until the pain was entirely removed; and what would have been the consequence? Why, according to the Doctor's own shewing, the patient would have been removed as well as the pain. This contradictory precept and practice needs no comment.

Now the principle on which Dr. Dill was treated, as laid down by our author, is as follows: "The only morbid condition of fever of which we have any knowledge, and over which the medical art has any control, is that of inflammation." Inflammation, then, was the affection which the Doctor had in view to prevent or to subdue; and now comes the question, was there inflammation? Did the signs indicate an attack of inflammation? There certainly was no inflammation at the period when the blood-letting was commenced, for "he was yet only feeble and chilly," and altogether free from pain. Nor was there, in our humble opinion, any manifestation of a pending or threatening cerebral inflammation. The being feeble and chilly may be the effect of cold, and is in no way diagnostic as a precursor of any particular complaint; and the confusion of mind, on which much stress is laid, is a very common occur-

rence in the cold stage of an intermittent, and therefore not to be relied upon as diagnostic of an attack of "an intense form of fever;" nor can it be wondered at that the pulse was slow, and that the patient sighed deeply. What medical man would not sigh, and feel confused, under the impression of an attack of an intense form of fever, that impression being heightened by the "ferocious" treatment commenced in anticipation? To us the effects of fear are very visible in the confusion of mind and "death-pale countenance," and slow pulse; a state just short of fainting, and one likely to happen to a professional man, the inmate of a fever hospital, who, feeling suddenly feeble and chilly, would naturally take alarm, and dread an approaching fever.

But let us compare the effects of the treatment with the view taken by Dr. S. Although no pain was present when the treatment commenced, it became intense after the abstraction of twenty ounces of blood; and although afterwards relieved for the moment, as every pain is, by blood-letting, still it returned and returned, till, "*unfortunately*," after having drawn blood till no more could be taken with safety, the patient had become in a state of "intense suffering and imminent danger." Was this tremendous loss of blood, then, beneficial? To us it is evident, as it will be, we are persuaded, to every practical man, that the state of imminent danger was rather the effect of the blood-letting than of the disease. Has Dr. Smith yet to learn that the pain in the head, which is so generally the precursor of an attack of fever, is *aggravated* by general blood-letting? We can assure him of the fact, and were commend it to his serious attention. Surely he must know that many pains in the head, which depend more on the nervous than on the vascular system, are aggravated by loss of blood, although they may be relieved for the moment; and this deceptive relief is the only motive we can assign for perseverance in drawing blood in Dr. Dill's case. Will Dr. Smith venture to put in practice an active and dangerous treatment on the evidence of one sign—pain? It is an error into which a sanguine student may fall; but a physician, of mature age, should at least act with more caution, if

not with more judgment. On this single case, too (no other is adduced or alluded to), is founded a diagnosis, that a slow and intermitting pulse "is characteristic of an exceedingly acute attack of cerebral disease, and one with the import of which it is of the highest consequence to the life of the patient that the practitioner should be perfectly acquainted the moment he meets with it." p. 108. "Whenever, in the onset of fever, a patient is found with intense head-ache, or intense pain in the back and loins, and a *slow pulse*, the physician ought to be greatly alarmed at the severity of the symptoms that are to follow; and if he do not take the most active measures to break the violence of the disease at this early period, it will be beyond all control in a day or two, and the patient will be dead before the fever is well found in milder cases." p. 109.

We should be glad to have an example of the above. In the case of Dr. Dill there was intense pain in the head, and there was a slow pulse; but the disease did not prove fatal in a day or two, nor was its violence broken by the most active measures persevered in as long as they could be with safety. Either then the measures are ineffectual, or the alledged indications of an alarming disease are not to be depended upon;—and yet on the strength of these indications is the diagnosis founded, and on the diagnosis a violent and dangerous, though at the same time an ineffectual, treatment.

The work concludes with some sensible remarks on the "Treatment during the convalescence," which we have much pleasure in recommending to the attention of our readers. "The mismanagement of the convalescence consists (says Dr. S.) in allowing the patient to rise too early from bed, and to take solid food too soon and in too large a quantity; and these are by far the most frequent causes of relapse. Were I to place on record all the instances I have seen of fatal relapse from these two causes alone, the list would be *frightful*." p. 420.

Relapses appear to be very frequent, and convalescence tedious, in the Fever Hospital. We ourselves have always observed that *convalescence is tedious*, and *relapses are frequent*, in proportion as the patients have been reduced by the

loss of blood; which fact we beg to offer to the consideration of Dr. Smith.

Several tables are appended, which present some useful details; but which, to our surprise, do not exhibit the ratio of mortality. The mortality at the Fever Hospital must, we presume, be great, if we judge from the number of dissections which are put down; and also from a table headed "Relation between date of attack, admission, and death, *for one year*, comprehending *eighty-four* cases. 'This great mortality may fairly be attributed, in part, to the circumstance of patients being sent into the hospital in an almost moribund state.

It remains for us to inquire whether any of the opinions advanced by our author can claim to be original.

Those of our readers who are intimately acquainted with the work on Typhus Fever, which introduced the late Dr. Armstrong suddenly to notoriety, will not have failed to remark the correspondence between it and the one under review. So exactly, indeed, do they tally, that the one appears to us to be little else than a version of the other; for not only are the particular opinions adopted, but also the main distribution of the subject, and on some occasions even the expressions; and all without a single allusion to the deceased original. Much as the opinions coincide, there is, nevertheless, a striking contrast in the redundant, gorgeous, laboured, declamatory style of our author, and the fluent, elegant, and persuasive language of Dr. Armstrong. Dr. Armstrong insists on the frequency and importance of inflammation in fever, and on this view founds his variety, *inflammatory typhus*, under which head he treats of *cerebral, thoracic*, and *abdominal inflammations*, *sub-acute* and *acute*; Dr. Smith goes a little further, and insists on inflammation being the *second event* in fever, and treats of it also under the divisions *cerebral, thoracic*, and *abdominal, sub-acute* and *acute*. Dr. Armstrong speaks of *fever passing into inflammation*—Dr. Smith adopts not only the notion, but the very expression. Dr. Armstrong contends that the plague, the yellow fever, the typhus, the remittent, the intermittent, were all varieties of the same thing, produced by a malaria of different degrees of intensity or concen-



tration—so contends Dr. Smith. Dr. Armstrong ridicules the notion of *debility*—so does Dr. Smith. Dr. Armstrong abuses Cullen—so does Dr. Smith. Dr. Armstrong contends that the changes in the blood are produced by the *bronchial affection*—so does Dr. Smith. As to the treatment, Dr. Smith's notions of the necessity and good effects of blood-letting are precisely those of Dr. Armstrong, urged with still more indiscretion. Dr. Armstrong used to introduce in his lectures some extraordinary case, where an immense quantity of blood was required to be abstracted; the same thing has been done by Dr. Smith, in the case of Dr. Dill. But Dr. Armstrong, with more prudence or less sincerity, represented the bleeding as all-efficient—Dr. Smith suffers it to appear that his patient grew worse as blood was drawn, and that another remedy saved his life.

This very singular coincidence of opinions brings to our recollection an article published in the Westminster Review several years ago, which was said to contain the facts and opinions of Dr. Armstrong on Contagion, without any acknowledgment of the source from whence the reviewer obtained his information. What Dr. Armstrong might have done had he yet lived, it is impossible for us to say; but whatever cause he had to be dissatisfied with the reviewer, the same, as it appears to us, he would have had to protest against the adoption, in the work before us, of all those opinions on which he founded his reputation. We do not agree in those doctrines, it is true; and in endeavouring to refute Dr. Smith, we have been arguing against Dr. Armstrong. Had the work not been landed elsewhere “in praises hyperbolical,” probably we should not have entered so fully into the discussion; and much as we differ from Dr. Smith and those who agree with him, he may so far at least regard our notice as complimentary, that had we regarded his work as unimportant, our analysis would have been much less elaborate.

In another number we shall give an account of the work of Dr. Tweedie.

## MEDICAL GAZETTE.

Saturday, May 29, 1830.

“Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso.”—CICERO.

### THE KING'S HEALTH.

WHEN we last had occasion to advert to the lamented illness of the King, we stated that the circumstances attending it were such as to leave but little hope of the complaint proving transient. Since that time, the evacuation of a large quantity of serous fluid has produced a great diminution of the swelling and an abatement of the most urgent symptoms; but the dropsy being unfortunately dependent on thoracic disease, its entire removal would not reach the root of the evil, nor prevent the constant tendency to the recurrence of effusion.

The public papers have, on many occasions, censured the reserved and guarded style of the bulletins which have been issued by the royal physicians, and, without expressing any opinion as to the extent to which the medical attendants ought to enter into details, we shall content ourselves with remarking that those who are most ready to blame are not always best informed as to the peculiar disadvantages under which the bulletins have been indited; while the lingering nature of the disease, and the variations it has already undergone, are sufficient evidences of the caution that is required in their construction. One individual has gone farther, and made some statements which we might suppose were merely the result of ignorance, were it not for the appearance of vexation and pique which they display. Thus Sir Henry Hallford and Sir M. Tierney are charged with incompetency; the former being designated “a very respectable gentleman,” but not com-

ing within the class of "scientific physicians;" and the latter, who has been for many years the professional adviser of his Majesty, and attended him in many severe illnesses, is declared to be a person utterly unknown. The absurdity of these allegations is too obvious to require their refutation; but when the writer ventures to assert that a "dangerous and often fatal operation" has been performed on the King, without the name of the surgeon appearing, or the slightest allusion being made in the bulletins to so important an event, we feel called upon positively to contradict so gross a mis-statement.

The "puncturing," which is spoken of in such formidable terms, consists in insinuating through the distended skin a very fine needle, the wound of which is so minute as scarcely to be seen, while its infliction is attended with no pain whatever. As an "operation," indeed, it is about as insignificant and bloodless as pricking the vesication of a blister. The danger which attends these cases depends entirely on the languid state of the circulation, and on the excessive tension of the parts which the puncturing is intended to remove. Thus in the case of his late Royal Highness the Duke of York great distention of the lower extremities took place, and ended in the mortification of a considerable part of the integuments—no scarification or puncturing having been adopted. It was for this local affection, and not for the *medical* part of the case, as erroneously stated, that the assistance of Sir Astley Cooper was on that occasion required. In the case of his Majesty, while the distention remained, there was of course risk of a similar result, and considerable anxiety was at one time caused by the scarifications, which, as we mentioned in a preceding number, had been made at an early period, becoming inflamed; but the tension having been entirely re-

moved by the use of the acupuncture needles, as adopted by Mr. Brodie, we are happy to say that the inflammation has been so much subdued as to remove all apprehension on that head.

We should not have thought of entering into these explanations had not an attempt been made to increase the anxiety, already so great, and to sow distrust in the public mind with regard both to the competency and honesty of his Majesty's medical attendants, in an article which, from having been copied into the "Times," acquired a degree of notoriety and importance which it could not have attained by its limited circulation among the members of the medical profession, who besides fully understand,—though the public cannot,—the feelings of disappointment in which it originated.

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#### COLLEGE OF SURGEONS.

WE are glad to hear that an investigation has taken place as to the conduct of the Beadle of the College of Surgeons, in receiving money from gentlemen desirous of undergoing examination. The consequence has been, his suspension from office. Another petty abuse was the custom of demanding five shillings for the diploma before its delivery—as well as *requesting* some gratuity for the tea and coffee with which the candidates are supplied when waiting to be sworn in. We understand that hereafter the diploma is to be delivered at the Secretary's office, without any fee;—as to the refreshments, it has always been against the rule for the servants to receive any remuneration for them. With regard to the diploma, the old regulation was bad: the beadle was allowed, if he carried it to the member's house, to receive five shillings, if offered—but not to demand it as a right.

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#### PHRENOLOGY IN IRELAND.

IT is a remarkable fact, that the phrenological system has never till very lately obtained any successful footing in the sister island. Several years ago,

we recollect, Dr. Spurzheim proceeded on a mission to enlighten the natives: he was listened to for the moment with courtesy and attention, but he made no converts. Of late, however, symptoms have occasionally manifested themselves indicative of a desire that the Doctor would go over, and expound his doctrines. He was, in short, persuaded to comply, and there he actually is, at this present writing, in the island of saints, charming the faculties of the inquisitive. His first course is over, and a second is in progress. The former was a decidedly popular course of lectures: it was delivered to a class of upwards of three hundred persons, a large proportion of them females, and stranger still, the majority of them individuals of a religious caste. What congeniality or coincidence they discover between their principles and those of phrenology, we shall not pretend to say; but such is the fact; Dr. Spurzheim has delivered, with great applause, a series of lectures on his favourite topic to a class of auditors such as we have described.

He is now engaged at the Park-Street School, in Dublin, delivering a more strictly professional course to a medical class of about ninety gentlemen, who hear him on the anatomy, physiology, and so forth, of the brain. Judging from the high satisfaction which we find expressed by those who have attended and are attending Dr. Spurzheim in Dublin, we should conclude that he will leave behind him some zealous proselytes in that capital.

#### ARMY MEDICAL INSTITUTIONS.

THE annual meeting of the Medical Officers of the Army was held, at the Thatched-House, on the 19th instant. The reports, both of the Association for Mutual Assurance and of the charity for Orphans, were highly satisfactory, shewing them to be in a flourishing condition, and established on a secure basis.

We may, likewise, take the opportunity of stating, that the library and museum, at Chatham, continue to increase. During the last year, the library has received an addition of not less than 300 volumes, chiefly by donations and by authors presenting their works. It has been found necessary to remove the

collection in natural history to separate rooms, the anatomical museum and library entirely occupying the building fitted up for them. Another very important benefit which the public owe to the Medical Department of the Army, is the collection of a great mass of valuable information regarding disease as it prevails among our troops, as well as histories of the epidemic and endemic maladies of our foreign settlements. We are not aware of any other source whence the same kind and extent of information can be obtained; and it is highly to the credit of Sir James M'Grigor, the present Director-General, under whose auspices these various collections have been formed, that we are enabled to add, that the library and museum at Chatham, and the record-room in Berkely-Street, are open, not only to the medical officers of the army, but to the profession at large.

#### ROYAL INSTITUTION,

Friday, May 21, 1830.

B. B. CABELL, ESQ. F.S.A. VICE-PRESIDENT, IN THE CHAIR.

#### *New Musical Instruments.*

MR. FARADAY exhibited to the meeting several new musical instruments which have lately been constructed, on the principle of the *Æolina*, with metallic springs, such as were explained here last season in their simpler states. The "mut-harmonicon," on its introduction about three years since from Germany, was believed to be an entirely original discovery; but lately it has been ascertained that the Chinese organ, an instrument which that extraordinary people have possessed time immemorial, contains a similar mechanism; although they were in the habit of taking the vibrating springs out of those they sold to strangers, so that their construction remained long concealed.

The instruments are still in a rudimentary state, but they possess a peculiar fulness and sweetness of tone which promise much when more advanced towards perfection. The *Symphonium* is even now an admirable instrument, and the *Æolian* organ, although harsh in its higher, is very excellent in its lower notes.



*Lithotritic Instruments.*

On the library table were the lithotritic instruments which some years ago Mr. Lukin, the American, submitted to the inspection of several surgeons, both in this country and on the continent. They are certainly very inferior to the improved apparatuses of Civiale and Heurteloup, which were shewn here last Friday; but if, as was stated, they were the first invented\*, they shew great ingenuity, and claim for their constructor much credit. In them, in fact, seem to be included the chief of the principles which in the others have been perfected; for the canula is *straight*; it contains a four-branched forceps, through the centre of which either a trephine-drill or chisel is made to act upon the stone. The forceps in this apparatus terminate in watch-spring loops, for the retention of the stone; and the two-branched forceps are only fitted to *extract* small fragments, being far too weak to crush a calculus; as will the brise-coque or the brise-pierre. They are ingenious, but we think not useful instruments.

## HOSPITAL REPORTS†.

## ST. THOMAS'S HOSPITAL.

*Swelling above Knee-Joint.*

HENRY DUNNING, aged 38, admitted under the care of Mr. Travers, on Thursday, April 29. He states, that about twelve months ago he was engaged in an occupation which required him to kneel, and in which position he remained for the greater part of two days, the weather at the time being very wet. On the third day after this a swelling made its appearance, a little above the knee joint, attended with a good deal of pain: he was now required to give up his work, and could only walk with the assistance of a crutch or stick. A fortnight after he applied to a medical man, who gave him a liniment, which inflamed the skin, and made the knee more painful; this was changed for strapping and plaisters, but without deriving any benefit—

the knee continued to get larger daily. Finding this mode of treatment unsuccessful, blisters were next had recourse to, and thirteen were applied in succession, which rather aggravated than alleviated the complaint. Soon after the blistered surface was healed, the swelling gradually became less, and he was able to go about his usual employment—that of a husbandman. He continued to work for upwards of two months, but at length found himself incapacitated. Nothing worthy of remark occurred from this time, until about seven weeks ago, when the knee began to increase in size, attended with considerable pain; a poultice was applied, and in a few days the swelling burst on the upper and inner part, and discharged upwards of a quart of thin yellowish matter. For several weeks previously he had been unable to procure any rest; but after the evacuation of the matter he found a good deal of relief.

Poultices have been kept applied up to the present time, and several other openings have formed spontaneously, through which fetid pus escapes. A probe can be passed into each of these apertures to some extent, but they do not appear to communicate with the joint. The swelling is of enormous size, the largest diameter being some distance above the articulation. He can flex and extend the limb without pain, and also walk without much inconvenience. When the knee is bent, a discharge of matter takes place from the wounds, in a small, but continuous stream. The joint appears enlarged from a collection of fluid, and the patella pushed out of its natural position, and is easily moveable. The patient is of a tall spare habit, with a sallow complexion; the abdomen is tense; the bowels much relaxed; tongue white at the sides, red down the centre and at the tip; pulse 81, weak and irregular.

May 5th.—A poultice has been kept applied to the knee, and he has taken the chalk mixture with opium, but without lessening the diarrhoea; a good deal of fetid matter escapes through the wounds, with dead portions of cellular membrane. He complains of great thirst. Tongue and skin dry; pulse 89, very weak; no appetite. The knee is not altered in appearance since admission.

7th.—A crucial incision was made into the swelling this morning at ten o'clock, each cut being about four inches in length, and half an inch deep. At the time he appeared very anxious. Nothing escaped but a very small quantity of blood. A cold poultice was applied, and he lost about four ounces more blood, which flowed into the poultice. About half an hour after the operation he was seized with pain in the stomach, and vomiting; also excessive tenderness on pressure at the scrobiculus cordis, and great distension of the abdomen; pulse scarcely per-

\* Is the writer aware of the claims of Mr. El-derton—as advanced in the preceding volume of the Gazette?

† The notice in our last respecting the boy on whom Mr. B. Cooper operated for stone on the 11th, was premature;—the child is now doing well, but it was only on the 24th that the urine for the first time passed by the catheter.

ceptible. A small quantity of warm brandy and water was administered by the sister, which remained on his stomach only a few minutes. He was again visited by the dresser about eleven, when the symptoms continuing the same, half a drachm of tincture of opium was given in a little water; this was rejected in about a quarter of an hour. Hot fomentations were applied to the epigastric region. At one p.m. we saw him; his pulse was then imperceptible; the least pressure, even the weight of the hand, at the scrobiculis cordis, appeared to induce the most acute suffering; his respiration was difficult, with restlessness and anxiety; and he expressed his conviction that he should die, unless speedily relieved.

About two he was visited by Mr. Whitfield; more brandy and water was given, which raised the pulse, but did not relieve the symptoms. This dose was not rejected. He continued to get more restless until about three o'clock, when he wished to get out of bed to go to the water-closet; he was not allowed to do this, but a bed-pan was procured, and he passed a watery motion; soon after, on raising himself up in bed, he instantly expired.

*Inspectio Cadaveris.*—On cutting through the integuments over the swelling, the first morbid appearance which presented itself was the cellular membrane in a sloughy state, equal in extent to the diseased skin; next to this the muscles, viz. the rectus and vasti, were found completely altered in their structure at this part, and converted into an uneven dense mass of a yellowish colour. Growing from the periosteum there was another, about three inches in diameter, of a flattened shape, and of similar appearance in texture; the bone beneath being scabrous. In the joint there was a considerable quantity of clear fluid. No communication was detected between this part and the swelling above. On the inner surface of the synovial membrane there was an immense number of small tubercles, which appeared of a fatty nature, and about the size of pepper-corns. Small but deep ulcerations existed on the articulating surface of the femur, seemingly of old standing. The condyles of the femur enlarged; the crucial ligaments and interarticular cartilages appeared healthy.

*Abdomen.*—Liver more than twice its natural size, and of a nutmeg colour—easily broken up underneath the fingers; spleen five or six times the natural size, and very much indurated. The stomach was also larger than usual, and its mucous coat softened; the cardiac extremity was of a dark red colour, but this was probably caused by a transudation from the spleen. Patches of red on the mucous surface of the colon, but no ulceration. The kidneys were much softer than natural; some of the pelvic

glands on the right side about the brim enlarged. Testes enlarged slightly, and hardened. The lungs were healthy. Heart and brain softer than natural.

Scars were observed here and there upon the body, which seemed to be the relics of scrofulous abscesses.

## WESTMINSTER HOSPITAL.

### *Painful Affection of the Left Arm from External Injury—Cured.*

SELINA CLIFFORD, æt. 16, admitted April 22, 1829, under Mr. White. This is rather a remarkable case of painful nervous affection caused by blows received on the arm.

Fourteen months ago, a little boy, in a fit of passion, struck her two or three times with a piece of iron, she thinks half a pound in weight, which was attached to a string in his hand. She had a baby in her arms, and in putting up her left arm to save it, received the blows on the outside of the fore arm, from the wrist to the elbow. Discoloured lumps came where the blows had been received, and on applying to a surgeon she had forty leeches applied, and from one to two dozen every day for a fortnight; her arm being much swelled, as high as the shoulder, and exceedingly painful.

She then had poultices applied for three months without any benefit. The injury seems to have been very severe, for she says her fingers were much swelled, and as "black as ink;" for nearly three months they remained discoloured. Her arm always swelled much at night; and about four months after the accident, it appears three sloughs came away where the blows had been inflicted.

After these had healed, her arm still remaining painful in the extreme, six blisters were applied one after the other: for three months her arm was much swelled, and became œdematous. Mr. White freely scarified it, and a great deal of fluid was discharged.

Her arm was then bound up, and occasionally fomented, for about two months, when she was admitted into the hospital. There was an eruption over the whole arm; the slightest movement of the limb gave her pain, and the lightest touch was like an elastic shock through her whole frame, more particularly in passing the finger on the ulna at the elbow, and along the course of the radius.

On being admitted, she had her arm fomented, for nearly two months, with an infusion of hemlock, and she took various preparations of iron. During this time, her arm became better than it had ever been before. She was, however, ordered to discon-

tinue the fomentation, and try to move her arm about, when it soon became as painful as ever.

She has since taken the quinine in full doses, without any evident effect.

She menstruated, for the first time, five months ago, and has since been regular. She was electrified about a month ago, and though she said her arm was more painful afterwards, it seemed to be less so below, though more on the upper surface.

Aug. 27th.—She was transferred yesterday to Mr. Guthrie, who ordered her

Tinct. Ferri. Ammon. ʒj.

Infus. Calumbæ, ʒiiss. bis in die sumend; and her arm bandaged and put in splints, from the finger-ends to the shoulder.

Aug. 29th.—She has had the following ointment applied, and strapping over it from the fingers to the shoulder, and splints the whole length, so as to prevent all motion.

R Ung. Hyd. fort. ʒj.

Camphoræ, ʒj. ft. Ung.

September 5th.—She continues much the same.

R Ol. Terebinth. ʒj. ter in die sumend.

Oct. 3d.—She has omitted the oleum terebinthinæ, on account of the irritation it excited in the urinary organs. The pain is less in the forearm, but increased higher up. She is ordered four leeches every night, to be applied to the lower cervical vertebræ.

10th.—She complains of much pain down the whole of her arm, when the lower part of the back of the neck is touched.

14th.—The pain in the arm is much worse.

21st.—The moxa has been applied this morning in five places, from the spine of the neck towards the shoulder.

25th.—Moxa repeated. Since the application of the moxa the leeches have been discontinued.

28th.—The moxa was applied again today; the leeches were again applied last night, and ordered to be regularly continued. The under surface of the arm and fingers is less painful, but the upper surface is much the same.

Nov. 4.—She can move the fingers more freely, and bear pressure on the arm better; but the shoulder is very painful.

10th.—The pain is less both in the shoulder and arm.

14th.—Improving; the arm has been again strapped up.

Dec. 29th.—The application of the leeches and moxa has been continued, and she has improved very gradually. She suffers at present from severe cough and pain in the chest.

Jan. 14, 1830.—She has had a very severe attack of pleuritis—frequently relapsing when apparently recovering. She has had the usual

remedies, blisters, leeches, &c. and is now quite out of danger.

Feb. 14.—On examining the arm, all tenderness on pressure has entirely left her; she is perfectly free from pain, and can make use of her arm without inconvenience.

16th.—Dismissed quite well.

## GLASGOW INFIRMARY.

### *Injuries of the Head.*

CASE I.—James Armour, aged 27, a quarrier—admitted 8th May. The accident had happened a week previously, and was occasioned by a quantity of earth falling upon him. He remained insensible two hours, during which considerable hæmorrhage is said to have taken place from the right ear. On recovering, he felt acute pain on the right side of the head, for which he was twice bled with marked relief. On admission he had little or no uneasiness, and complained chiefly of giddiness when he attempted to raise his head from the pillow. He was perfectly blind of the left eye, the pupil of which, however, contracted freely on exposure to light. The sense of hearing of the right ear was much impaired. His mouth was slightly drawn to the left side, which deformity increased greatly when he spoke. The pulse was about 60, the skin cool, and in other respects he was under no fever. The bowels were freely opened, and, on the following day, a large blister was applied to the head. On the 13th, four days after admission, there was an accession of feverish symptoms, with return of headache, and deep-seated pain under the right ear, the hearing of which was completely gone. The pulse was full, and had risen to 90. He was bled from the arm, and the blistered surface was ordered to be dressed with savine ointment. On the 14th, the pain in the head and ear had all but gone, and in every other respect he felt greatly better. The features were much less distorted, and he had recovered in part the hearing of the right ear. The pulse had fallen to 70. The blister was repeated to the head, and he was ordered gr. ii. calomel three times a day. In the course of a week his mouth became affected, and the medicine was therefore omitted. He continued daily to improve, and was dismissed well on the 8th June, having been a patient in the hospital exactly a month. At this date the features did not appear to be at all distorted, except when he laughed or attempted to smile. He did not recover the sight of the right eye.

There was a combination of symptoms in this case. It was evidently one of concussion with partial compression. The insensi-



bility in the first instance, and the gradual recovery afterwards, are characteristic of the former; while the amaurotic state of the left eye, and the palsy of the right side of the face, evince the latter. These symptoms, no doubt, could be accounted for on the ground of its being a case of pure concussion. In what is termed concussion of the spine, for example, we often witness more or less palsy of the bladder and lower limbs to succeed. Exactly the same may be said to take place in similar injuries of the head; nevertheless, I am disposed to attribute these effects in a great measure, if not altogether, to compression. The hæmorrhage which occurred immediately after the accident shews, of course, that there had been rupture of a blood-vessel, and consequent effusion of blood. This, in every probability, took place in some part of the tractus opticus of the right side, or farther back at the origin of the nerve. In this way, too, can be explained the dulness of hearing, and the loss of muscular power of the right side of the face.

This person was not admitted till after the eighth day, by which time the inflammatory stage subsequent to the accident had subsided under the usual means. The principle observed in the treatment was to excite absorption, if the symptoms depended on effusion; or, supposing these to be the consequence of concussion, to rouse the tone of the nerves. Both ends, probably, were accomplished by the measures had recourse to; namely, counter-irritation, and the exhibition of mercury.

On the fourth day from admission, there was a return of feverish symptoms, with pain in the situation of the ear, which readily yielded to a full bleeding. This perhaps depended on an inflammatory state of the brain, excited by the effused blood. In cases of effusion into the substance or on the surface of the brain, we often meet with accessions of inflammation occurring in the progress of its absorption. In this respect, the presence of the fluid seems to act merely as a cause of irritation, and may therefore be compared in its operation to that of an exostosis, or any other tumor, in producing fits of apoplexy, &c.

One other circumstance in this case ra-

ther uncommon, may be mentioned, viz. that the motions of the iris of the blind eye remained perfectly free. From this it is evident that the mobility or immobility of the iris is by no means an index of the sensibility of the retina at all to be depended on. This is owing to the iris being supplied by the ciliary nerves, which proceed from the lenticular ganglion. I have frequently met with cases of amaurosis with active pupils, and *vice versa*,—an immoveable state of the pupil with perfect sensibility of the retina.

CASE II.—James Gorman, aged 30, admitted 4th June, in a state of insensibility, having on the preceding day, while in a state of intoxication, leapt from the roof of a one-story house, and pitched upon his head. The only external injuries visible were an abrasion of the left cheek, and a dislocation of the first phalanx of the left thumb backwards on its metacarpal bone. He is said to have vomited freely after the accident. When placed in bed, he lay in an insensible or rather semi-comatose condition, returning no answer when loudly questioned. He moaned frequently, and seemed acutely sensible to pain, as evinced by his restlessness in drawing up and then throwing out his limbs when firmly pinched. The pulse was 120, sharp, the respiration slow and deep-drawn, the skin hot and dry. Immediately on admission the dislocation was reduced, during which he struggled much in violently resisting attempts at extension. Twenty ounces of blood were then taken from the arm, 16 leeches applied to the head, to be succeeded by cold application; and he was ordered a purge of calomel with infusion of senna and salts. The bleeding from the arm was repeated on the 5th. On the 6th he was more composed. The pulse was down to 90, and soft. He put out his tongue when requested. The pupils, particularly the right, were dilated. On the 8th he was in every respect perfectly intelligent, though he still complained of slight headache. The pulse had fallen to 70; the tongue was clean and moist. On the 9th he appeared worse, having passed a very restless night. He had a vacant expression of countenance, with stupidity in answering questions: a blister was in consequence applied to the head. He had a more restless night, and was so very delirious as to require the strait jacket: the pulse, however, was no way excited, the skin cool, and he had no thirst. The blistered surface was dressed with savine ointment, and he was ordered gr. ii. calomel every third hour. He was kept on low diet. The mercury was continued till the mouth became smartly affected. He daily got better, and was dismissed well on the 1st July.

This man was re-admitted a fortnight afterwards, complaining of vertigo, of double vision on walking, and of pain occasionally shooting through the head. He was cupped on the nape of the neck, a blister was applied to the head, and he was ordered to use a mercury pill three times a day. On the 22d, five days after admission, the mouth is reported to be affected, when all the symptoms were greatly relieved. On the 29th the medicine was recommenced, and a caustic issue burnt in the nape of the neck. So soon as the mercury again took effect, and violent ptyalism was induced, the symptoms wholly disappeared. He was dismissed cured on the 10th August.

He was again admitted on the 23d, labouring under nearly the same symptoms as formerly, but with little or no pain of the head. The issue, which had nearly healed up, was opened, and the mercury repeated, with the use of a strong stimulating liniment for rubbing the surface of the head. On the medicine fairly appearing in the mouth, the unfavourable symptoms began to wear off. The mercury was repeated, and he finally left the hospital cured, 15th Sept.\*

This man was admitted on the day subsequent to the accident. With the exception of slight abrasion of the cheek, there was no visible mark of injury elsewhere on the face or skull. Nevertheless, it appeared at the time, and as its issue proved, a very severe instance of concussion, complicated most probably with slight extravasation. The primary effects had worn off, and the stage of re-action had commenced many hours before he was brought to the hospital. In cases of this kind, an interval of sense usually takes place between the injury and re-action. In this case, however, there was no such interval, and consequently the symptoms of concussion were gradually and imperceptibly converted into those of inflammation. He did not recover intelligence before the third day. The treatment was very simple. The man had suffered a severe mechanical shock, to which inflammation, as a necessary consequence, had succeeded. The chief indication, then, was to subdue arterial action. This was effected by bloodletting in sufficient quantities to control the force of the circulation, the advantages of which were strikingly apparent. Although rather a tedious case, it was otherwise very inte-

resting. The frequent return of vertigo, double vision, &c. proves to me that it was, in every likelihood, complicated from the commencement with partial laceration of the brain, and slight extravasation of blood; or that perhaps effusion of serous fluid had happened after the cessation of the inflammation. I should have imagined it more likely to have been caused by the first. One or other of these circumstances, however, sufficiently explains the loss of memory, giddiness, double vision, &c. We often find similar effects to supervene on the cure of phrenitis, or in cases of fever where there has been a great flow of blood to the head, and more particularly in injuries of the head with decided extravasation of blood.

For the removal of these symptoms, the treatment consisted in obviating, in the first instance, the chance of the recurrence of inflammation, and afterwards in favouring absorption by counter-irritation. The former was accomplished by cupping and the use of purgatives; and the latter by the repeated application of blisters, and the formation of a caustic issue. After a sufficient trial, these were found to be perfectly ineffectual. Mercury, as an ulterior measure, was therefore had recourse to, and used freely and repeatedly with the best effect.

As soon as the mouth got fairly under the influence of the medicine, the unfavourable symptoms uniformly began to subside. Their frequent recurrence convinces me that the brain perhaps may have been slightly lacerated, giving rise to partial effusion of blood, either at the time of the accident, or at a period subsequently to it. Instances of secondary hæmorrhage are certainly rare, though several are on record. The same line of treatment is applicable to both cases.—*Dr. Auchincloss, in the Glasgow Medical Journal.*

#### NOTICES.

A correspondent is anxious to know when the promised continuation of Mr. Tyrrell's edition of Sir A. Cooper's Lectures may be expected?

The last page of the article in answer to our notice of Dr. Corrigan's paper has been mislaid. Can the author supply us with the conclusion?

\* This person called on me early in February, on his return from Ireland, where he had resided since leaving the hospital. During that period he had enjoyed good health.

# THE LONDON MEDICAL GAZETTE,

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## LECTURES ON SURGERY,

*Delivered at St. Bartholomew's Hospital,*

By WILLIAM LAWRENCE, F.R.S.

### LECTURE XLVIII.

*Recapitulation — Ununited Fracture — Compound Fracture—General Treatment—Question of Amputation.*

I SPOKE to you, gentlemen, in my last lecture, of the different modifications of bandages that are applied to broken limbs. The eighteen-tailed bandage is the one [pointing to it] which is placed before you: it is so named because on each side there are nine of these small ends, which are called tails. The bandage is made of three broad pieces of linen, which are sewed to a straight piece transversely; the second overlaps the first by about one-half, and the third piece overlaps the middle one in a similar way; and each of these three pieces being divided at either end into three smaller parts, there are thus in the whole eighteen ends or tails. Now each of the three portions of linen which is thus divided must be long enough to encircle the limb once and a half at all events. Beginning the application of the bandage from below, the successive parts overlap in order, so as to enable you to exert a direct and regular pressure in the circular direction of the limb.

The bandage more commonly used now is very similar, but is made of pieces separate in their whole length, and indefinite in number; these are sown together on a straight piece in the same way. This is the many-tailed bandage, the parts of which it consists not being limited to any particular number.

The bandage of Scultetus consists merely of a certain number of these separate transverse pieces not united together.

I mentioned to you the different materials of which splints are composed. This is the ordinary form of a wooden splint for the leg [presenting it]: we find it necessary to employ two of this sort—one adapted to the external, and one to the internal side of the leg. This is a similar kind of splint [exhibiting it], made of japanned iron. In using either of these, you will find it necessary to be on your guard not to have the splint too much hollowed out; for when the limb is swelled, as it commonly is, in consequence of the violent injury which it receives in a fracture, it becomes of considerable width, and more or less flat on the surface, so that if you put on a splint as much hollowed as the one I now show you, the edge will press injuriously and painfully upon the surface of the limb. It must be a very small limb that we could place in the concavity of this splint, therefore it is an ill made one in that respect. It should be nearly a level surface, though a little excavated in the middle, in order to support the limb pleasantly, and avoid pressure of the edges upon the soft parts of the limb. These splints [shewing them] are called line splints—they are made of pieces of split deal, connected by leather glued on the surface. They are convenient on a variety of occasions—sometimes to confine a limb temporarily till a more suitable apparatus can be permanently applied—sometimes, where we want a small splint to apply to any particular part, we can cut them; and inasmuch as they are flexible in the transverse direction, they accommodate themselves to the form of the limb.

When a limb has experienced considerable bruising by the same injury which has caused the fracture of the bone—when, consequently, blood has been effused into the cellular texture, and the limb is considerably swollen—you may anticipate the occurrence of inflammation, just as you would do from a similar injury of the soft parts not connected with the fracture. If you had an injury of that kind without fracture of the bone,



you would not think of binding the limb up firmly with bandages; and, *a fortiori*, if you applied wooden or iron machinery of this kind to it, so as to embrace it tightly, you would of course think that mode of proceeding likely to aggravate the inflammation which the injury of the limb may be expected to produce;—now the circumstance of a bone being broken does not render it at all more proper for you to adopt that course of proceeding in such an accident.

In the first place, you should put out of consideration the circumstance of the fracture, and treat the case as you would do a similar injury of the soft parts not connected with fracture. You should endeavour to prevent the occurrence of the inflammation which the injury is likely to produce—you should endeavour to reduce the swelling which the bruise and ecchymosis have occasioned; and when you have removed all risk of that kind, then you may proceed to bandage the limb, and to apply the splints proper for the fracture. In such a case, then, in the first instance you would lay the limb in the position most agreeable to the patient's feelings, and generally that is the half bent state, such as patients usually throw the limbs into when they sleep: you lay the limb in this way on a soft pillow, and then you adopt either the local or general means that are necessary to reduce the swelling, and limit the extent of the inflammation; such as leeches to the part, cold washes, and other means contributing to the same purpose. You may find it necessary to pursue this treatment for some days before you think it expedient to apply the dressing which is more particularly proper for fracture; and you will find it advantageous to reduce completely the inflammation and swelling of the limb before you proceed to confine it in the way which the fracture requires.

The same reasoning applies if the limb should swell after you have put on your fracture apparatus. The patient sometimes feels the apparatus painful—it makes the limb uneasy, particularly after it has been a few hours confined; and you may occasionally find it expedient to undo the apparatus during the day-time, to leave the limb on a broad splint, apply a cold wash, and other means necessary to reduce the inflammation, and then slightly to confine it during the night, in order to prevent the patient being troubled with the spasmodic twitches that are likely to occur if the limb is left entirely unconfined.

With respect to that particular circumstance which is so often a considerable annoyance to the patient—spasm of the muscles of the limb, twitches by which the edges of the bone grate against each other—we find it difficult in some cases altogether to prevent them. The more completely we keep off the occurrence of inflammation, the

less likelihood there is that the patient will be troubled in this way. After the inflammation is removed, the more exactly we adjust the fracture—the more immovable the fragments are kept—the less probability there is of the occurrence of spasm. I believe you seldom find much advantage from the exhibition of any means that are supposed to have a direct influence in alleviating spasm—opium, or any other thing of that kind.

Frequently the skin is very seriously bruised in cases of fracture. Ecchymosis takes place in the cutaneous texture, rendering the external surface of a deep livid red, and the injury to the skin is often so considerable that the minute vessels of the surface pour out a serous fluid, and vesication of the cuticle occurs on the bruised part. These vesicles often contain a turbid and dark, sometimes a livid or reddish fluid; and it happens occasionally that such vesicles, combined with the deep red or livid appearance of the bruised parts, lead persons to apprehend that mortification has occurred, or is about to take place. The appearances, indeed, are sometimes deceptive; you will nevertheless find, in cases of simple fracture, however extensive this livid and dark red appearance of the skin may be, however considerable the vesications that may occur, that they are simply the consequences of bruises of the skin, and do not portend any danger of mortification. All you have to do is to prick the vesications, let out the fluid, and lay on the surface of the part simple dressing, such as spermaceti ointment on lint; and you find that the integument does not lose its vitality, but recovers very well.

#### *Ununited Fracture.*

After a fractured limb has been kept in a suitable apparatus for the length of time which is ordinarily found sufficient for the union of the bone, we sometimes discover, on removing the apparatus, that the bone has not united. Occasionally we find the fracture quite loose, the limb moveable in the situation where the fracture has taken place, and sometimes such a want of union continues for weeks, and even for months, nay, often at the expiration of a year or more, the fracture will not be consolidated;—it is then called a case of *ununited fracture*. This, of course, is a very unpleasant occurrence both to the surgeon and to the patient. The limb is rendered useless, or nearly so—that is, it bends in the situation of the fracture, just as a joint. By the exertion of the muscles the bones rub against each other; and when such facility of movement occurs, it leads to the supposition of a joint being actually formed in the situation where the fracture has taken place; indeed, in coming to examine these cases, in some instances

there is a kind of smooth surface of bone produced—there is a kind of condensed investment surrounding it—something like an imperfectly formed joint. More commonly, however, the bones are found connected together by a kind of ligamentous texture. It is important to ascertain, in this case, whether the want of union arises from any thing particular in the fracture itself, or from any peculiarity in the constitution of the individual; or whether it is referable to some part of the treatment which ought to be adopted for the consolidation of the bone either having been neglected or having been inefficiently applied. The question will therefore be, whether the occurrence is owing to any thing that belongs to the nature of the fracture, or to something peculiar in the constitution of the patient, or to something inefficient in the treatment.

I apprehend, if we take all the cases of want of union, we shall find more reason for concluding that the deficiency arises from the latter cause than from either of the two former. Mr. Amesbury, who has paid particular attention to the treatment of fractures, and who has published some observations on the subject which are very well worthy your perusal, seems to have had a great number of cases brought under his observation; for, in a work published some time ago—“*Observations on Fractures*,”—he has collected a great many such instances, and has related his own experience in ununited fractures; and from this experience he expresses very decidedly his opinion, that it is to the inefficient means adopted for bringing into, and retaining in proper apposition, the broken ends of bones, that the defect of union is generally to be ascribed. Consequently the treatment that we should follow, to avoid the possibility of this occurrence, consists rather in carefully maintaining the fracture in apposition in the first instance, than in any other course of proceeding. Mr. Amesbury says, that in a great proportion of the cases which came under his care, when a properly contrived apparatus was applied, and the broken ends of the bone were brought into accurate contact and retained firmly in apposition, the fractures united within a moderate length of time. But inasmuch as it may be supposed that, in consequence of the length of time that may have elapsed since the receipt of the injury, there is some defect in the increased action which seems necessary to the consolidation of the fracture, he recommends, not merely the applying of an apparatus for retaining the bones in contact, but the combination with that of the use of pressure upon the situation of the fracture, in order to excite increased action. This may be accomplished by using particular kinds of pads, so as to press upon the part, or by other contrivances of a mechanical nature connected with the apparatus

you employ; the object being simply to exert such a degree of pressure as shall excite a certain degree of pain in the part, that lasts for a few days—something like rheumatic pain. When the case has been conducted in the way I have already mentioned to you, Mr. Amesbury has found that the ununited fractures have united readily enough. He observes—what I think accords with my own experience on this subject—that individuals in whom defect of union is thus seen, are generally persons of healthy constitution; those in whom we cannot observe any evidence of defect in those natural powers, from the exertion of which restoration is to be expected.

It is important to ascertain the point that I have now mentioned to you, because, if the union can be accomplished by the simple means that I have stated, we shall save our patient from the necessity of undergoing other kinds of treatment, which are both painful and dangerous; for, in cases of these ununited fractures, proceedings have been adopted, with a view to produce union, which at all events have generally required a long course of confinement, and in some instances have produced much local disturbance in the limb, and in fact have proved ultimately fatal to the patient. Sometimes incisions have been made in the situation of the fracture—the fractured ends have been exposed in a wound, and actually sawn off. This I need not observe to you is a serious proceeding; indeed, in the middle of a fleshy limb, as the thigh for example, it must be a very difficult thing to accomplish. You inflict an extensive wound—one which is very likely to be followed by considerable inflammation and other dangerous consequences; and in many of the instances in which this process has been undergone, the patient has been left in a worse state after the operation than he was in before.

Another mode of proceeding in these ununited fractures, has been that of passing a seton between the broken ends of the bone, and leaving it there, in order to excite in the ends of the bones and the neighbouring soft parts that action which is supposed to be inefficient. After a certain degree of inflammation has been excited by the seton, it is then to be withdrawn, trusting the union to natural powers. I believe it may be said that there are some two or three instances recorded in which, after some weeks or months of confinement, with a good deal of pain and danger, the union has been effected in this way; but in other cases the introduction of the seton has failed. Sometimes blisters have been applied externally, and then rubbing the broken ends of the bone together has been tried, in order to excite the necessary degree of action where it had not previously taken place: these, at all events, are not dangerous proceedings.

*Compound Fractures.*

I proceed next to speak to you of the management of *compound fractures*: the observations that have been hitherto made are applicable to the cases of simple fracture. In compound fracture, the soft parts may be divided by the same violence which breaks the bone—as in the case of a wheel passing over a limb. A contused and lacerated wound of the soft parts is made by the wheel, at the same time that it causes the fracture, and in such a case you have often a large external opening. More commonly the bone is broken first, and then the fractured end (particularly if the fracture be oblique, so that a part of the bone has a sharp extremity, and therefore easily slips off the corresponding surface) is forced through the soft parts, in consequence of the exertion which the patient makes with the limb after the fracture has occurred. The patient rises perhaps, and attempts to walk or stand upon the leg, and thus the end of the bone is forced through the skin. When an accident of this kind occurs to a person who is intoxicated, not being aware of what has happened, he makes violent efforts to rise, and thus the end of the bone is not only forced through the soft parts, but through the dress—through the stocking—and sometimes it has been forced through the patient's boot. In these cases, where the division of the soft parts is secondary, the external wound is usually small—sometimes a mere puncture, produced by the sharp edge of the bone—while the internal injury in such a case is perhaps just as extensive as in the former instance.

The degree of injury is extremely various in cases of compound fracture. In the most serious cases it becomes a question whether the loss of the limb may not be necessary, in order to prevent the risk which would otherwise accrue to the life of the patient? It is difficult to lay down precise rules in order to determine this point. Each case presents something peculiar to itself, and it will be necessary for the judgment of the practitioner to be exercised, after a careful consideration of the peculiarity of each individual instance. We can only speak in a general way as to the principles that should guide us in determining this important question. We must attend to the degree of injury which the parts have experienced, and also to the greater or less importance of the parts involved. For instance—we must see whether the joints are at all injured—whether it is probable that any considerable blood-vessel, or any large artery, be implicated. The age and constitution of the patient must be taken into consideration; and it is also sometimes a question of importance to ascertain whether the patient will have such professional care and such comforts as his situation requires.

Comminuted fracture of the bone, with the soft parts extensively torn and mangled, in consequence of the limb having been entangled in machinery, for instance, is a case respecting which we can be under no doubt at all: amputation is necessary under such circumstances. You sometimes find a limb half or three-parts torn off by an accident of this kind, where the fracture of the bone is by no means the most important part of the injury: in such a case it is obviously necessary to amputate. Cases of comminuted fracture, with serious bruising and excessive laceration of the soft parts, where the bone is extensively exposed and denuded, with the soft parts separated from it, more especially if the fracture be in the neighbourhood of a joint, with a great probability that it extends into it, and with the probability also of the main artery or arteries being injured—that kind of case is one in which amputation may be proper if it occur in an old person, in a person of enfeebled constitution, or if it take place in an hospital or any crowded situation, where the process of recovery generally proceeds comparatively less favourably. But the same kind of injury may not be thought to require amputation if it occur in a young subject, one of vigorous constitution, in an individual who is situated in pure and wholesome air—as in the country. We must be on our guard against hastily condemning a limb in a case of this kind; for the resources of nature are so great, that sometimes we see injuries repaired without any unfavourable occurrence, though we may have anticipated that the loss of the limb would prove inevitable.

I remember the case of a lad who was brought into this hospital, and came under my care, with a dreadful compound fracture of the leg, produced by a cart-wheel going over it. The accident had so occurred that the wheel had rested upon the leg, and, in addition to very great laceration, there was an external wound of some inches in length, leading down to the ankle. About four inches of the tibia was completely denuded and the soft parts almost detached, the bones projecting, and the fracture as well as the wound extended close to the ankle-joint. I considered this to be a case in which amputation would be proper, and I represented my opinion of the necessity of the measure to the patient, but he seemed to have made his mind up upon that subject,—he would not part with the limb; and the representations that were made to him of the probable loss of life had no effect in altering his determination—he would not have it removed. The limb was laid on a broad splint, on the opposite side to that on which the accident occurred—namely, on the inner side of the leg. Means were adopted for accomplishing the cure as well as we could and preventing the occurrence of inflammation, and the



case got well really without a single unfavourable symptom taking place. In about a dozen or fourteen weeks the wound, which was extensive, had consolidated, the fracture united, no exfoliation of bone occurred, and the lad had a good strong limb.

You are not to consider the size of the external wound as a criterion of the degree of injury; it is the violence which the bone has experienced, the contusion and laceration of the soft parts immediately around it, and the injury of the joints or large arteries, which constitute the source of danger in these cases. *Ceteris paribus*, I think it is desirable, in a compound fracture, to have a large aperture, because such free external wound affords a ready exit to matter—large collections of which sometimes take place;—in many instances of that kind you see that the case does better than where there is only a minute external opening of the skin.

The reason of amputating in a case of compound fracture, is the danger that would accrue to the life of the patient from the consequences of the injury if the limb were not removed. In the very serious cases of this kind which sometimes occur, traumatic gangrene, mortification of the limb generally, may be expected to come on; violent inflammation of the whole limb, with a corresponding febrile disturbance of the system, which may run to such a height as to endanger life. Then there is more remote danger from repeated suppurations, and from the exhaustion of the powers which take place when they get into the chronic stage—when there is a copious thin discharge, with hectic fever. Another consideration which influences us in these cases, is the very imperfect and sometimes useless state of the limb, after the patient may be said to have recovered from the injury. The injury which the soft parts and bone have sustained are so considerable, and repeated inflammation and suppuration have produced such thickening and stiffness of the muscles, tendons, and other parts, that the patient perhaps recovers with a limb in a condition not at all useful to him, but, in point of fact, rather burthensome than otherwise; and that too after many months, nay sometimes after years, of suffering. These are the considerations which induce us, under certain circumstances, to regard it as expedient to amputate the limb rather than to attempt its preservation.

The same question occurs in these cases as in the instance of serious injuries to limbs from gun-shot wounds, respecting the time at which amputation may be most advantageously practised; for in cases of compound fracture, as in those instances, amputation may be either performed immediately after the occurrence of the accident, or we may defer it, in order to allow of the subsidence of the inflammation and fever which

come on soon after the accident. I had occasion to consider fully, when I spoke to you of gun-shot wounds, the question that I am now adverting to; and I stated then, that there is no doubt whatever of its being by far the most safe, and consequently the most eligible practice, to perform amputation immediately—that is, within twelve, or say at most within twenty-four hours, from the occurrence of the injury; and all the considerations which lead to that inference in cases of gun-shot wounds are equally applicable to cases of compound fracture that require amputation—I therefore need not go over the ground again.

When we treat a compound fracture with a view of repairing the injury and restoring the limb to a useful state, we generally, but not invariably, attempt to produce union of the external wound: we bring the parts together and retain the edges of the wound in contact, in the hope that they may become united, and thus that the compound fracture may be converted into a simple one. Now we do not very often succeed in this, because the wound of the soft parts is not of a kind favourable to the occurrence of adhesion; it is a lacerated and contused wound, and wounds of that kind do not readily unite by adhesion. We may make the attempt, however, for there can be no harm in doing that. We may either draw the edges of the wound together with short pieces of sticking plaster, or by the application to the wound of lint dipped in the blood that flows from it. This dries, and forms a kind of external crust upon the surface of the wound, under which it may unite; and if we can succeed in producing this closure of the external wound, we know that the case will go on very much as if it were merely a simple fracture.

It is necessary in compound as in simple fracture, to bring the displaced ends of the bone into their proper position—to place them in contact, and to maintain them so. But the injury which the soft parts have experienced is one of the circumstances that requires our particular and early attention. In almost all instances, these soft parts have been considerably contused and torn, and we may naturally expect that, in consequence of such injury, inflammation, suppuration, and fever will occur; renewed inflammation and suppuration—repeated formations of matter. And you will recollect that inflammation here occurs in the cellular texture, in the very centre of the limb; you will remember how easily inflammation, when it takes place in the cellular substance, runs along that texture so as to extend to the whole length of the limb in a short time—as in the case of phlegmonous erysipelas. When, therefore, the internal cellular structure is the seat of inflammation, and when the progress of matter to the surface is im-

ped by muscles, tendons, and fascia, which are seated externally to it, the extension of suppuration in the intervals of the muscles throughout the whole length of the limb, is a very formidable occurrence. These are consequences of fracture which we must endeavour as much as possible to avert or limit; and hence the question occurs, what is the course most likely to accomplish this purpose? You find it necessary here, as I mentioned in the case of simple fracture, with contusion or laceration, to put out of consideration for a time the fracture of the bone, and to adopt the means that are necessary to prevent the occurrence of inflammation in the soft parts. You will certainly not expect to prevent this occurrence of inflammation by tight bandages and the application of hard wooden or metallic splints to the limb; on the contrary, you would think such a mode of treatment very well calculated to increase the mischief. You must adopt, in such cases, active antiphlogistic treatment, just as if you had the same injury in the soft parts without the fracture. In young and strong patients of full habit, where there is such injury, you must bleed from the arm, and follow that, perhaps, by the local abstraction of blood—leeches; you must apply cold, and adopt the other parts of the antiphlogistic treatment. During the time you are doing this, the limb should be laid on a soft pillow, or perhaps upon a long broad splint, duly padded, and arranged so as to prevent the fractured ends of the bone from moving on each other. There has been a dispute (in fact almost all points in the medical profession have been disputed) whether it is proper to bleed in cases of compound fracture or injuries of this kind; and one of the principal reasons that has been brought forward against bleeding is this—that in the progress of the case, in order to repair the injury which the accident has produced—in order to unite the bone—in order to remedy the consequences of inflammation, suppuration, and so forth—the patient will require considerable powers to counteract these depressing causes; and therefore you ought not to take blood from him—you ought not to run the risk of lessening those powers, the exercise of which will be so much needed in the future progress of the case. It seems to me, that the reason for bleeding is in order to *prevent* the inflammation and suppuration which, in the further progress of the case, are said to require this constitutional power. If you adopt suitable antiphlogistic treatment, such inflammation and such suppuration do not occur; so that the demand is never made upon those constitutional powers. The reasoning which objects to bleeding, in consequence of the extensive suppuration which will take place in the progress of the restorative process, seems to me to come to this:

if you do not bleed, inflammation and suppuration will ensue, and you want power, in order to repair the effects of these processes—you are not to bleed, because you will want that power. This is a mode of reasoning in which I cannot coincide; the occurrence of inflammation and suppuration, inasmuch as they are not checked—in point of fact, the neglect of proper antiphlogistic means—is made a reason why these antiphlogistic means should not be instituted. But the only ground for adopting this treatment is the expectation, or I should say certainty, that it will prevent the occurrence of the inflammation and suppuration, which are supposed to require such constitutional power to carry the patient through them.

It is by no means invariably necessary to bleed *generally* in cases of compound fracture. General bleeding probably is only required in some few instances, where the patient is robust—where he is of that kind of constitution in which the occurrence of considerable inflammation may be reasonably expected. In the majority of instances it will be sufficient to bleed freely from the part—to apply leeches repeatedly, until the probability of inflammation shall have passed by.

If, in a few days after the occurrence of the fracture, pain and swelling should come on—if the patient should begin to feel hot, feverish, and thirsty—you then would adopt the same kind of antiphlogistic treatment that I have just mentioned; for you have still the same object in view. Until all increased action and all probability of considerable inflammation is at an end, you will not find it expedient, in cases of compound fracture, to bind up the limb, or to confine it tightly by splints; in fact, close confinement and the firm application of these hard substances, are much more likely to increase the disposition to inflammation than to be of any service. I think, therefore, that until all risk of this kind is gone by, you should adopt very gentle means for retaining the ends of the broken bone in contact; and in compound fractures—particularly those of the leg—I think nothing answers better than what is called a fracture-box.

[Mr. Lawrence here exhibited one.]

The sides and ends admit of being altogether or partially opened. The limb rests on a soft pillow at the bottom of the box, and is supported at each side by two pads; and the foot is similarly supported by a pad at the end. Then the fracture-box is so constructed that it can be opened at different parts, and can be fastened again, by buckles and straps, just to any degree of firmness that may be requisite. It prevents such movement as would be painful to the patient; by altering the thickness of the pads, or by putting an additional pad in any situation, you can produce pressure where you

want to confine the bone, or prevent it from deviating in any particular direction. By opening one side of the box at a time, you may dress the wound, if it be on the side of the limb, and you may apply poultices or dressings very conveniently. If you have the pillow and side pads covered with a piece of oil cloth or silk, you keep them clean, and you find the limb is rendered exceedingly comfortable by this kind of apparatus. In many cases, the limb goes on so well after these compound fractures, that one prefers leaving it in the box to putting it in the ordinary splints. However, after the inflammation has gone by, when there is no longer any risk of that kind, the limb may be taken out of the fracture-box, laid upon splints, and confined in the usual way.

The progress of a compound fracture is often retarded by the separation of a portion of the broken bone. The ends of the bone being pretty completely denuded, sometimes perish, so that the part must be completely separated before the union can commence; and you are no doubt well aware when a part of the whole thickness of the tibia, for instance, has to be removed by absorption, that a considerable time is necessarily requisite; however, after this is accomplished, you find the union of the bone takes place perfectly. Although a considerable piece may come off each end of the broken bone, as in the case of the tibia, the resources of nature are sufficient to supply what is lost, or at all events to ossify the soft matter which intervenes between the ends of the bone, so as to render the union sufficiently strong to bear the weight of the body.

There was a case in the hospital during the last summer of rather an elderly person, between 50 and 60, who had received a bad compound fracture of the leg, in consequence of jumping out of a window, the house being on fire, where considerable inflammation took place, and where a piece of the whole thickness of the tibia separated by exfoliation, but where the bone afterwards united.

It may happen that the bone is comminuted in the situation of the fracture—that some portions are completely detached and quite loose, or if not, that they are merely connected by some slender portion of the soft parts. When such portions are lying loose, and near the surface of the wound, it is better to remove them at once; they are only sources of irritation and inconvenience if they are left behind. You are not, however, to make any extensive incisions in order to remove them;—I speak only of fragments that are entirely, or so nearly detached from the bone, that they admit of removal without such incision, and without giving much pain to the patient.

I should have observed to you that sometimes, if the end of the bone has been forced through the skin, you will find a difficulty

in restoring it to its situation,—it is so completely held or girt by the integuments, that in some instances we cannot replace it. Under such circumstances, there are two courses of proceeding. It may be necessary to enlarge the wound of the skin a little, so as to gain the power of replacing it:—or, in some instances, we find it advantageous to saw off the projecting point of bone, in order to admit of replacing, and bringing the fractured ends into proper apposition.

In respect to the inflammation which frequently comes on in compound fracture, when matter forms in consequence of such inflammation, it is expedient, as early as we can, to make an effective opening for its discharge. The matter in this case often forms deep in the limb, and if we do not produce an entire discharge of the matter, it is apt to extend in the limb, to run in the intervals of the muscles, and to produce extensive sinuses or excavations, which are afterwards very troublesome, and the source of long-continued suffering. A free and early opening, therefore, is particularly proper in cases of inflammation and suppuration occurring after compound fracture.

It may be a question whether it would be proper to proceed to amputation, if we are certain that the fracture extends into a joint. Now such a circumstance does not render amputation necessary, if the fracture have no immediate external communication. The process of restoration necessary to the consolidation of the fracture will go on very well, and the case do nearly as well as if the fracture did not extend to the joint. It may happen that inflammation of the synovial membranes may ensue, in consequence of the extensive injury which occurs either in simple or compound fracture; but such inflammatory affection of the joint may be combated by antiphlogistic treatment, and therefore such an injury is no ground for proposing the loss of the limb. Would it be expedient, or is it necessary, to propose amputation in cases of fracture extending into the joint with an external communication? If there were a large and extensive opening into a considerable joint, it might be necessary; but the mere circumstance of such continuation of fracture into a joint not of the largest size, does not of itself by any means furnish a reason for amputation.

In the course of last summer, there was a patient in this hospital with a compound fracture of the lower part of the tibia; the bone was in fact comminuted, in consequence of a heavy mass of stone falling on the limb. After a little time, a portion of the bone came away, consisting of part of the internal malleolus; in fact, the bone was comminuted in that situation; but the patient recovered very well. There were no symptoms of any consequence resulting from the extension of the fracture into the joint. The portion of the



bone involving the articular surface having been separated, the joint was rendered stiff, but no other circumstance that was at all particularly unfavourable occurred.

Now when you consider how extensive the mischief is in many of these cases of compound fracture, you will easily understand that the consolidation of the bone and the reparation of the injury altogether, require a longer period than is found necessary in cases of simple fracture. Eight, ten, or twelve, or even a greater number of weeks, often elapse before the fracture is consolidated. And again, from the long confinement, from the inflammatory swelling which the parts have undergone, from the deposition into their texture consequent on the inflammation, so much swelling and stiffness ensue, both immediately around the fracture and in the neighbourhood of the contiguous joints, that the limb, after the accident may be said to be cured, often remains in a state of very little use to the patient for a considerable length of time. In this state, friction, bandaging, surrounding the limb with strips of soap plaister, warm bathing, stimulating liniments, and exercise of the parts,—these are the means which, together with the natural process of absorption, ultimately restore the use of the limb.

#### OBSERVATIONS

##### ON THE

#### ANATOMY, PHYSIOLOGY, AND DISEASES OF THE CRYSTALLINE LENS,

##### *And their Treatment.*

By RICHARD MIDDLEMORE,

Assistant-Surgeon to the Birmingham Eye Infirmary.

[Continued from page 334.]

*Causes of Cataract.*—In alluding to the causes of opacity of the lens, I must refer to my opinion respecting its vascularity. I have said, that deriving its vessels from the capsule, it must be greatly influenced by the condition of that membrane; being loosely organized, it cannot endure much excitement; its death speedily follows augmented action, or imperfect supply. Are we to consider a thoroughly opaque condition of the lens equivalent to its death? I believe this opinion to be correct. The cataract of infants—congenital cataract—would seem to be a consequence of defect in the formative process: we observe that such a lens is milky and

diffused, and does not increase in density with the growth of the body. We know that a part may have vessels, and a circulation vigorous enough (although peculiarly adapted to the parts they supply) to form, but not to support the structure so formed. In illustration of this fact, let us instance the organization of an adventitious structure. We find a mass of lymph, a membrane, a mere film, or a clot of blood, increase and form a regularly-shaped tumor, and then suddenly slough. Congenital cataract would appear to be owing to a similar process; the circulation in the lens is not ample enough to support the structure its vessels have formed. In old age, when the circulation declines in power, a gradual obliteration of the vessels of the lens follows, and opacity becomes slowly developed—first in the centre, where they are most minute, and most distant from the source of impetus: and here I would remark, that the very great induration of this part sometimes noticed, may depend on a thickening and induration of its vessels. Whether this induration and thickening depend on ossific deposition, to which the arteries of old persons are subject, it would perhaps be difficult to determine; but reasoning from analogy, such would appear to be the case. The central opacity, a speck almost too minute for observation, would appear to depend on the incapacity of the vessels to preserve their action; but the destruction is limited in extent, in consequence of an ample and more vigorous circulation at the circumference than in the centre. The same languor of circulation, it is reasonable to suppose, exists here, in that part most remote from its source, as takes place in other parts of the body. If the lens become dislocated, if it be separated from its vessels, it quickly becomes opaque; like other parts, it perishes when deprived of its circulation. If inflammation be excited in a part loosely organized, death quickly takes place. This observation particularly applies to the lens. When, from injury or any other cause, the action of its arteries is greatly excited, its vitality is rapidly destroyed, as is evidenced by its very speedy conversion into an opaque substance, and, like other dead parts, it then ceases to perform its functions; it is no longer able to transmit and refract the rays of

light. Dr. Abercrombie has observed, that the brain becomes softened after it has been acutely inflamed: for this, amongst other reasons, he is inclined to believe that softening is, in fact, death of the brain; but he has laid down no rule by which to judge of its degrees of vitality—he does not say what degree of softening is essential to the entire loss of its life;—indeed, before the existence of such a state, dissolution must obviously take place. I allude particularly to this circumstance, as it correctly describes the mode in which that structure evidences its death. Can we deny to the lens a peculiarity of appearance, when deprived of its vitality, different from that of other structures from which it differed during its life? From these observations it would appear that cataract may arise from a defect in the formative process, the vessels of the lens not being sufficiently large and numerous to support it—(the human system is full of occasional evidences of the imperfections of nature in the lesser parts of her work, in her want of adherence to the perfection of her model in minor points, but important defects are seldom observed)—from the gradual obliteration of vessels in old age—from accidental violence, but not by occasioning opaque deposition—and from concussion by lacerating its vascular connexions. Mr. Wardrop, in the second volume of his “*Essays on the Morbid Anatomy of the Human Eye*,” asserts his belief that senile cataract may be owing to a want of balance between the functions of secretion and absorption; but if this opinion were accurate we should have, instead of a lens opaque and nearly as large as in adult life, one diminutive in size, but possessed of transparency. The function of absorption seems to be less liable to interruption than any other: the emaciation and attenuation of old age, and other evidences of loss of structure, amply testify the activity of absorption compared with secretion, at that period of life.

I am not acquainted with any means by which the progress of cataract can be arrested. This in itself furnishes a strong argument against the supposition that chronic inflammation of the lens, by occasioning opaque deposition, produces cataract—the slowly-advancing cataract of old age. Unfortunately for

the advocates of this opinion, old age is not the season when inflammation would be expected to occur; nor, if it did take place, would it be beyond the reach of treatment. We are able to subdue inflammation of other parts, in people advanced in life; why should the lens alone be beyond the reach of remedies?

If my view of the subject be correct, nothing short of an operation can restore vision. During the progress of simple, uncomplicated cataract, belladonna may be used for the purpose of expanding the pupil, by which the thin and least opaque portion of the lens will be exposed to the action of light;—in this consists our chief, if not our only means of palliating the defects it occasions during its advancement to maturity. Before proceeding to describe the operations best suited to the various forms of cataract, it may be well to say a few words concerning prognosis. Our prognosis will be favourable, if a patient with congenital cataract, and no obvious malformation of any other part of the eye, is able to distinguish light from darkness, and a weak from a strong light; or if a cataract takes place slowly in the otherwise healthy eye of a patient between the ages of fifty and sixty-five. Our prognosis will be doubtful, or unfavourable, if it arise from accident which has at the same time injured the deep-seated texture of the eye, or if it be connected with iritis or disease of some other important part, or take place in very advanced life; or if it be combined with amaurosis or glaucoma, any adhesions to the iris, a contracted pupil, a narrow anterior chamber, a broad arcus senilis, an absorption of vitreous humour, or hydrophthalmia. It has been asked, why is not an operation undertaken as soon as, or soon after, cataract unequivocally evidences itself? Why permit a patient to remain for months, or even years, with just sufficient vision to render darkness visible? If an operation be undertaken at the commencement, when a patient has the power of distinguishing large objects, and should not be successful, we may be exposed to the reproach of having deprived him of a certain degree of comparative comfort; his condition after having undergone the anxiety, pain, and confinement of an operation, being worse than prior to its perform-

ance. It seems probable also that a greater degree of inflammation is likely to be excited by interference during the progress than at the close of morbid action; it is therefore prudent to wait until all useful vision is quite lost.

For children, delicate and old people, the only preparative treatment required will be a little aperient medicine; one or two doses, so as to clear out the alimentary canal, will be quite sufficient for the purpose;—but in adult and middle age, in the strong and phlethoric, a course of preparative treatment is necessary. The patient should be bled and purged, the diet should be lowered, until a reduction of the general fulness of the system be effected. If any irritability of the eyelids, tinea or chronic ophthalmia, be present, it should, as far as possible, be removed. In short, irritation of the eye, disorder of the general health, and fulness of the system, are circumstances unfavourable to the successful result of an operation, and ought on that account to be removed prior to its performance.

Cataract is generally removed by one of the following operations: extraction, solution, depression, and keratonyxis. Extraction should be preferred whenever the lens is hard, the anterior chamber ample, and the cornea of its customary size. Solution is required when the lens is soft, when the capsule has contracted extensive adhesions to the iris, or the latter membrane to the cornea, when the lens has become absorbed, and a portion of the capsule alone remains, or when the cornea is small, or the patient so old and feeble that the union of the corneal flap may not be expected to take place. Keratonyxis is suited to cases where the cataract possesses an unusual degree of softness or milkiness, or where partial absorption of the lens has taken place, in consequence of accident, in which a mere touch with the point of a couching-needle will be sufficient to ensure its removal. This operation is quickly and easily performed; and as no deep-seated parts are injured by it, it is followed only by a very trivial degree of inflammation. I object to depression, for a variety of reasons: we are unable to limit the extent of the depression, we cannot tell how far the lens may be urged; if it be forced against the retina, serious inflammation may arise, and a train of

evils horrible to contemplate. The cells of the vitreous humour must be lacerated, and the operation may be rendered fruitless either by its resuming its position or by its irritating effect upon the iris.

*Mode of performing the Operation of Extraction.*—Let the patient lie upon a table, near to, but not opposite the window, with the head somewhat raised and the face turned obliquely to the right side (supposing the left eye to be the one selected for operation); an assistant gently raise the upper lid, and, without making any pressure upon the eye-ball, fix it against the edge of the orbit. The operator then resting his right hand upon the cheek of the patient, and holding Beer's knife with the thumb, the index, and the middle fingers, and depressing the lower lid with the left, passes it somewhat inwards, as though he intended to transfix the iris at a little distance from its ciliary attachment; when (having passed it quite through its layers) it should be turned in a direction parallel to the iris, and by a gently propelling action of the fingers, or more properly by their extension, urged through the opposite side of the cornea, at about the same distance from its junction with the sclerotica, at which it entered. The propelling action of the fingers being now continued for a short time, the whole of the cornea will be divided, with the exception of a small portion at its lowest part. By a slow, steady, downward movement of the knife, this division will be readily effected. Some operators prefer to press the nail against this small portion of the cornea, in order that it may be more correctly incised; a practice to a certain extent objectionable, inasmuch as the cornea is bruised as well as divided, by the pressure of two hard surfaces. During this process, the eye of the operator should carefully watch the point of the knife, for on its accurate guidance mainly depends the quality of the incision.

As soon as the cornea is divided, the assistant should be directed to drop the eyelid and gently rub the cheek, so as to quiet that spasmodic action of the muscles which is apt to follow the incision of the cornea. When the patient has recovered from the pain of this part of the operation, the assis-



tant must again carefully elevate the lid, avoiding all pressure upon the eye-ball. The operator having depressed the lower lid, carefully introduces beneath the corneal flap a slightly curved needle, with its convexity upwards, until it reaches the centre of the pupil; its point must then be directed towards the capsule, and moved in various directions, so as to lacerate it freely. The instrument must now be withdrawn, with its convexity downwards, and the eyelids closed as before. In a few minutes the lids should again be separated, and, if the lens remain in its situation, the flat end of the curette should be laid in a transverse direction upon the upper and back part of the eye-ball, and gently pressed upon it, taking care that the pressure be so gradually applied as not to urge the lens through the pupil with a forcible jerk, but gently and slowly to raise it, to tilt its edge over the lower loose border of the iris. If, on the application of pressure, the vitreous humour seems inclined to project, and the upper edge of the lens declines, it would be advisable to pass a fine hook into its substance, and gradually withdraw it.

If the first puncture of the cornea be made in too perpendicular a direction, the iris may be transfixed, and the consequent abrupt turn of the knife, so as to place its flat surface parallel to the iris, will be likely to bruise the cornea, and, by enlarging the opening, to permit the premature escape of the aqueous humour. If it be made in too oblique a direction, the internal division will by no means correspond with the external, and will probably not allow of the passage of the lens, besides leaving, in the event of union, a broad cicatrix, which may greatly obscure vision; or, what is worse, the point of the knife, instead of passing through, may pass between the layers of the cornea; an accident very likely to induce a permanent opacity or sloughing of that tunic. If the incision should be too small, either from the first puncture being made much below the diameter of the cornea, or from the point of the knife coming out too soon, or from the lower section being made too distant from the junction of the cornea and sclerotica, it would be advisable to enlarge it, rather than endanger the laceration or inflammation of the iris by urging the lens through

an opening too small to admit of its easy transition.

*Operation of Solution.*—The patient being placed as for extraction, the eye not to be operated upon being steadied by the pressure of a bandage, and the assistant having fixed the (left) eye, and raised the upper lid by means of a speculum, the operator, holding between the fingers and thumb of the right hand a fine couching-needle, passes it through the sclerotica, about a line and a half from its union with the cornea, and rather below its diameter (on account of the ciliary artery), obliquely towards the optic nerve. Having transfixed the sclerotica, the handle of the instrument should be gently depressed, and its point brought in front of the cataract and moved in various directions, so that the capsule may be freely lacerated, the lens broken, and some of its fragments placed in the anterior chamber. The needle is now to be gently withdrawn. It is of great consequence to use a very fine and sharp needle, and never to move it about so freely or so extensively as to incur the risk of doing much injury; bearing in mind, that it would be far preferable to repeat the operation again and again than provoke great inflammation, by an absurd attempt to render the first operation effectual. The needle I think preferable, is small in size, flattened towards its extremity, and sharp at its sides and point.

[To be continued.]

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## LITHOTRITY.

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*To the Editor of the London Medical Gazette.*

SIR,

HAVING already forwarded to you, at different periods, papers on the action of the principal instruments, and the method of employing them, translated from the MS. of Baron Heurteloup, I now send you some considerations on the various circumstances which influence the operation and enable the surgeon to decide on the propriety of operating by the lithotritic instruments. This chapter has appeared to me to contain much valuable information, and

I trust will prove acceptable to such of your readers as take any interest in the subject.—I have the honour to be, sir,

Your obedient servant,

J. RUTHERFORD ALCOCK.

May 21, 1830.

*On the Circumstances which contribute to the Success of the Operation of Lithotritry, and on the Conditions which render it difficult or inadmissible.*

[Translated from the Manuscript of BARON HEURTELOUP.]

As soon as the lithotomist determines that a patient ought to undergo the operation, it may be performed without further consideration or difficulty. Whether the bladder be wide or contracted, the stone large or small, flat or round, adherent or not, the surgeon, with a cutting instrument, is always able to penetrate into the organ where the stone has been deposited, and, by the opening which he makes, remove the calculus if it be small, or tear it out if of large dimensions. The varieties in the organs which are observed, or any peculiarity of formation, temperament, &c. are of slight importance to the surgeon performing the operation of lithotomy. With an instrument cutting his way, and ready to use direct force, all obstacles are soon removed, for they cannot be of a nature to resist the powerful energy of the instruments which he employs.

The lithotritic surgeon, on the contrary, whose object is to cure the patient by gentle means, and who is forbid any kind of violence, has to thread a narrow passage with his instruments, manœuvre them in a soft circumscribed organ cut of sight, and then act upon a stone of which his only knowledge must have been acquired by the touch; and who, to obtain the cure of his patient, has to count upon the expulsion of the fragments by the natural efforts of the bladder and by the narrow passage nature has intended for the ejection of the urine. He must necessarily meet with difficulties proportionally greater, as the means he employs are more gentle and allow of less violence. He feels himself compelled to weigh and consider numerous details which are of no importance to the lithotomist, but nevertheless, when he proceeds to the practice of his art, become the subject

of considerations of the greatest interest; for acting by dexterity rather than force, he ought to turn aside obstacles, and not remove them.

These are the points which we will endeavour to present to the attention of our readers with arrangement, in order that they may be enabled to appreciate the circumstances which determine the greater or less propriety or impropriety, of submitting a calculous patient to the operation of lithotritry. We will first consider this subject as influenced by age; 2dly, the constitution or general habit; 3dly, the state of the urethra; 4thly, of the prostate; 5thly, of the bladder; and lastly, of the stone.

#### *Of Lithotritry considered with relation to Age.*

If lithotritry has been introduced for the purpose of avoiding the danger of the common operation, it must lose in importance when considered in relation to children; for it is observed in lithotomy, practised on children from six to seven years, or even from seven to eight, the results are not nearly so frequently fatal as in the adult, and still less in old age.

This observation naturally inclines us to be less disappointed that lithotritry is not nearly equally applicable in children as in those of more mature age.

If we return to the examination of the basis by which we have established, that lithotritry will always be employed with advantage under proper circumstances, we shall readily perceive how rarely children will be found in such favourable condition. We have said that lithotritry will be more frequently attended with success in proportion as the patient shall present himself to the surgeon nearer the beginning of the disease. In this view children are unfavourably situated, for it seldom happens that the persons about them attend to the inconveniences which the stone may cause at the commencement. An adult is at once aware of the unpleasant sensation at the end of the penis, and observes immediately, by the stoppage in the jet of his urine at times, that there is some derangement in the urinary organs. A child, however, under the same circumstances, says nothing—probably perceives nothing, and complains of nothing. During the first three or four years, the calculus falls in the

bladder without one's being aware of it, and enlarges in this organ. If the sufferer has already attained the age of five or six years he complains sometimes, but this is rare; the sensation which he experiences he mistakes for a natural one, and endures it for a long time, until the instinctive movements, the result of this painful sensation, carried to a high degree, denote a state of suffering that cannot escape the observation of an attentive mother: it is remarked that the child often has his hands to the end of the penis, drawing it out and squeezing it to ease himself of the painful feeling; elongating it to such an extent as almost to constitute a disease. His urine stops suddenly while voiding it, he stamps while in the act, and his face becomes red; he cries and screams, is agitated, and often, when very young, convulsions supervene.

It is certainly impossible for all these symptoms to take place without exciting the attention, and determining the persons under whose care the child may be, to consult some one; and this is in fact what takes place, but not until the disease has already gone on to such an extent as to cause the symptoms to be strongly marked; and these symptoms do not arrive to this marked state until the calculus has attained the size of a peach-stone, or a small nut, and sometimes larger; for the calculus increases in size as quickly in children as in adults.

If we now consider, in extreme youth, how narrow is the passage through which the instruments are to be passed into the bladder, and more especially through which the fragments of the stone are to be expelled—how difficult also at that age it is to maintain, during the operation, that tranquillity and immobility which is necessary to enable the surgeon to employ the requisite tact and delicacy—we shall be able to appreciate, without weighing this subject much longer, how difficult the operation of lithotritry must be in children, and how very considerably the favourable circumstances which often accompany this operation on the adult are diminished.

We must not forget that a stone which may be considered small in the adult is large in a child; for the size of a stone, with regard to lithotritry, ought not to be estimated by an absolute measurement, but relatively to the

power of the instrument which has to destroy it, and the capacity of the canal which is to give passage to the fragments. Thus the largest of the instruments we can introduce into the urethra of a child under six or seven years, cannot exceed two lines, or two and a half in diameter; and the action of an instrument of this size is so weak and slow as to render it imprudent to attempt to reduce a stone of from ten to twelve lines in diameter into fragments sufficiently small to pass by the urethra; for this would require manœuvres, and repeated sittings, which would not be without danger.

Such are the considerations which lead us to conclude that, in very young children, the operation of lithotritry will never be equally general in its application as in the adult; and the strongest reason for this is found in the difficulty of attacking the disease at the moment of its commencement, and also in the very great mobility to be encountered in all such patients.

Let not this decision, however, be taken in too absolute a sense; for we are very far from proscribing the application of lithotritry in children. We believe, on the contrary, that it will be rationally applicable in those cases where the stone gives rise, soon after its fall into the bladder, to well-marked symptoms; and attempts to pulverize it will be attended with success, for the calculus will be in a fair proportion to the power of the instrument employed.

When, on the contrary, the stone has acquired a certain volume, we must recollect that lithotomy performed on children is not so dangerous as in adults, and that the pulverization of the calculus presents greater inconveniences and difficulties with respect to the organization and the slight development of organs in which we are to operate. Again, we must remember, that the question here is not whether lithotritry is practicable in children of this age, but rather, if performed, whether it offers greater chances of success than lithotomy. This is what we doubt, whenever the stone has acquired the size of a hazel-nut before the age of three years, or a small walnut, if from the age of five to six, seven, or eight years.

It must be evident that these considerations are applicable to children in direct proportion to their age, and as they advance from the period of their



birth, they become less and less applicable; hence, as soon as they have arrived at their seventh or eighth year—the period at which they commence to analyze their sensations, and when they can appreciate the difference which exists in their urinary organs between a state of good health and that succeeding the formation of the stone in their bladder—the importance of lithotrity increases with respect to them, and each year which brings them nearer to the adult state, augments the favourable chances of relieving them by these means.

Facts have already supported this opinion, and science is in possession of examples of cure obtained by lithotrity in children of from seven to eight years' old: I have myself operated and cured one child of seven years and a half, who suffered from a stone of five lines in diameter. This is the only case in which I have thought it right to employ the lithotritic instruments in children under eight years, though several have been brought to me for examination. But the little patients had suffered a long time, and carried stones at the time of considerable volume, so much so that I declined operating by a method which I did not believe was the most sure means of effecting their cure.

The age most favourable to success in this operation is the adult; then all the organs are fully developed, the passages are large, the bladder spacious—its expulsive force is in its greatest vigour; sensibility is sufficiently developed, joined to a slight attention which every one of this age pays to the manner in which these functions are performed; all account for the fact, that the adult, more frequently than either infancy or old age, is found in the most favourable condition of having only a small stone to be destroyed, for, aware of its existence at an early period, and comprehending the means now offered of relief, they quickly have recourse to the lithotritent.

Old people, setting aside the change that takes place in the contraction of their organs, and an age in which all the tissues lose their firmness, present, notwithstanding, considerable facility for pulverizing the stones; their canals are large; their bladders extensible and dilatable; there is no obstacle to the performance of lithotrity at this age, but it presents an inconvenience of

some importance, inasmuch as the power necessary to expel the fragments is often wanting. This want of energy, in addition to the laxness of the urethra and the vascular condition of the neck of the bladder, the result of organic changes effected by years, and sometimes aided by the presence of calculi, renders the expulsion of the fragments very difficult, if not impossible. In cases where this inability is observed, it forms a direct prohibition to the operation. Sometimes this want of power is shewn before the commencement of the operation;—when the patient evinces a habit of body marked throughout with the character of great debility;—when the urine drops gently out, falling between the feet, and especially when a gum elastic bougie is introduced into the bladder which contains urine, and it does not evince sufficient power to expel the liquid within it with any force. In this case, we must take good care not to operate if the stone have acquired any volume, that is, from 10 to 14 lines for example, for the fragments will not be expelled; they will exhaust the patient, and sometimes lead to accidents which the stone, if left entire, would not have caused. If, however, the stone be small, it may be broken up or reduced into very small fragments, which may be done tolerably quickly when only of the size alluded to; the expulsion of these particles may be excited by the introduction of a large silver sound, with large eyes, of which we will speak in another portion of this work, when we examine in a general manner the circumstances which attend the removal of the fragments.

We have by these means effected the cure of two old men, one aged 72 and the other 82, neither of whom retained the power of expelling the fragments. In a third, aged 82, we were compelled to desist from the operation, for the stones being in too great number, the introduction of the sound was rendered too often necessary, and consequently too painful. This patient afterwards underwent the operation of lithotomy.

At other times, the inability of expelling the fragments only supervenes during the course of the operation, after one or two sittings; the patient who expelled the fragments at first with difficulty and slowly, now utterly fails. We are then obliged to have recourse to the sound; but it must always be re-

membered never to employ it until there is a moderate quantity of fragments to remove, otherwise the patient will be too much fatigued; it is even better when the size or number of the calculi are great, to relinquish the operation, for we cannot hope it to be followed by any good result, if it be necessary to have recourse to the sound very often.

We see, then, with relation to the age of the patient, the operation of lithotripsy leads to considerations of some importance; we see that, well adapted to cure adults, it becomes much more limited in its use as the patients on whom we would operate are at the two extremes of life.

*Lithotripsy considered in relation to the Constitution or general Habit of Body.*

Obesity, which, when it takes place to a great degree, is sometimes an obstacle to the easy performance of lithotomy, presents no difficulty in the operation of lithotripsy. Among the patients I have operated upon, one was excessively corpulent, a baker by trade, and I found that this, so far from increasing the difficulty of performing the different manœuvres of the operation, appeared to render them easier than in spare subjects, whom, at first sight, we should have been inclined to say presented a more favourable condition. In general, all other things being equal, the patients whose *embonpoint* is rather excessive, seem to afford greater facilities for the operation, more especially that part of it which consists in seizing the stone. I have also found in these patients greater facility in the introduction of the instrument. I have considered that these advantages were owing to the urethra being held more firmly, and its sides presenting less distinct cavities, these being filled up by the surrounding cellular substance—allowing the instrument less latitude of motion; and in depressing the instrument, I have found the greatest facility in seizing the stones, and more especially the fragments in fat subjects, owing to their bladders, when distended, having a more regular and rounded form, the base more elevated, and the stone in this kind of bladder is more conveniently placed with relation to the opening of the branches. This is evident in examining the distended bladder of a

fat subject, when this organ is in a healthy state. If the description I have already given of the bladder, more especially of the form of its interior when distended by urine, be recollected, it will be easily understood that the inequalities of this organ must be in direct proportion with the emaciation of the subject.

It must not be forgotten that I speak here of a case wherein the urinary organs are quite healthy, for we shall see that in disease and enlargement of the prostate, or in the case where the rectum is rendered voluminous by internal hemorrhoids, the bladder of a fat person, in proportion as it is filled with water, occupies less space in the lower cavity of the pelvis, which is in a great measure filled with adipose tissue, and hence is found more disadvantageously altered by these accidental circumstances than when they happen in spare subjects; for it is evident, that the less space there is in the organ, the more any cause which shall diminish that is a disadvantage. Emaciated subjects, when their organs are healthy, present, on the other hand, greater facilities for the breaking up of the stone, on account of the largeness of the bladder, which permits the branches of the instrument to be fairly extended, and full play to its action. This is especially favourable where a whole stone is to be crushed; but when we come to the later stages of the operation, that of seeking for the last fragments, it is not so easy to seize them as in the bladder of a person moderately corpulent. In spare subjects, the fragment is lodged under the neck, which, as we know, is of considerable depth, and the bladder being very large, having a wide base, the fragment no longer falls necessarily in the direction of the axis of the stone, for it remains either at the right or the left below the neck, and is the more troublesome to find, inasmuch as it is irregular, and not being spherical, like a small stone when entire, it does not roll to the *rendezvous*, as it were, where we find all small stones while they retain the round form: in whatever kind of bladder it may be in, a fat or an emaciated patient, this is an inch from the neck of the bladder, and constantly in the direction of the axis of the instrument.

An organic state of disease carried to a high degree, seems to form sufficient

grounds for declining the operation, especially when the stone has arrived at so considerable a size as to require the operator to return to the attack a great many times. Lithotritry in ordinary cases rarely gives rise to any degree of fever or organic derangement; but in a diseased subject, particularly where all the central organs are severely affected, this patient is more liable to the sympathetic derangement which sometimes ensues from the irritation caused in the urinary organs, by the manœuvres which the operation requires. Nevertheless, if the stone be small, so that it may be removed at two or three sittings, we think the patient may undergo the operation with advantage; but we are also of opinion that it ought not to be attempted unless a small stone should cause the patient great suffering. For the rest, it is for the surgeon to weigh the comparative advantages and disadvantages which lithotritry in such cases offers, and to employ or reject it according as the peculiar circumstances may lead him to decide. But we would particularly impress upon the surgeon this consideration—that the operation of crushing the stone in these cases, even when practised with the greatest care and gentleness, may produce sympathetic affections, which will spread from the diseased organ.

Whatever be the inconveniences, however, which lithotritry presents in these cases, they are not to be compared to those which result from lithotomy; which, besides, ought never to be performed in these cases. Thus we find in lithotritry a resource applicable with at least some chances of success to patients whose death would necessarily be the result of lithotomy.

Another condition may also prohibit the employment of the lithotritic instruments, or at least require to be well considered: when the question arises respecting a patient in whom there exists great disposition to acute calculous nephritis, and in whose bladder a number of stones are already formed, I cannot speak from experience of such a case and its results, since I have not yet had an opportunity of observing it; but if I may be allowed to judge by analogy, I should refer to the fact of a man suffering from gravel and catarrh of the bladder, which I treated by means of the sound, with which I injected water several times each day into the organ, after

having first emptied it of the urine, loaded with mucus, which it contained. This patient voided habitually gravel; which, after being formed in the kidneys, passed the ureters and fell into the bladder, from whence it was expelled with the urine. When I commenced making injections, I observed in the commencement some little improvement, but after a few days the pains in the kidneys increased, and gravel was voided in greater quantities. I stopped the injections and ceased introducing the sound; the pains diminished sensibly, as also the formation of gravel; but in the end, the catarrh continuing, I returned to the use of the sound. The pains and gravel returned, until, enlightened by the frequent return of the same phenomena, I perceived that there was a manifest correspondence between the appearance of the pains accompanied with formation of gravel; and the irritation which I produced by repeating the introduction of the sound daily, which, notwithstanding it was done with the greatest care, still always gave the patient a little pain.

This fact may give rise to the belief, that the irritation excited in the bladder may, by sympathetically communicating with the kidneys, determine in these organs that peculiar state which causes the formation of calculous concretions. This opinion may be further supported by the observation of several persons affected with acute gonorrhœa, who, during the time they had the urethra thus inflamed, voided red or white powder, which was deposited at the bottom of the vessel containing the urine. This deposit was remarkable, for among these patients some of them had never observed it in their urine, and others who had observed it during their lives, before they had contracted the gonorrhœa, had not perceived any vestige of this powder. It is also worthy of observation, that frequently after excessive venery the urine becomes turbid, and deposits oftener powder of uric acid than in the ordinary circumstances of life.

We conclude from this fact, that if the inflammation attacking the urethra and bladder can cause a more considerable formation in the kidneys of the calculous matter, this ought to induce us to examine attentively what advantages these patients may derive from the operation of lithotritry, before we



induce them to submit to it. Let it not be forgotten that we speak here of patients who have a calculous diathesis carried to a great degree, and have already several stones in the bladder, which would require for their removal a great number of sittings; for it is evident that a man having several small stones in the bladder, notwithstanding he may have a strong calculous tendency, these stones ought to be pulverized. In this case it is scarcely necessary to say that the patient ought to be placed immediately on the regimen most opposed to this predisposition, and especially to the attacks of acute nephritis, to which such subjects are very liable.

[To be continued.]

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TWO CASES  
OF  
STRICTURE OF THE LARGE IN-  
TESTINES,

*About the point of the termination of the Sig-  
moid Flexure in the Rectum; with Observa-  
tions.*

BY JOHN BURNE, M.D.

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CASE I.—*Scirrhus-contraction of the  
Large Intestine.*

A GENTLEMAN, between 45 and 50 years of age, of a sanguine and very irritable temperament, and accustomed to live well and keep late hours, consulted me in February, 1826, on account of some troublesome superficial small ulcers in the mouth, which had teased him for several weeks, and had resisted the remedial means employed. Accompanying these ulcerations was a taste of heat and dryness of the mouth and pharynx, with some little trouble in deglutition. The temperature of the body was increased and the surface dry, and the pulse was accelerated and rather tight; and the first hours of the night were passed restlessly, the bowels being habitually regular. The above assemblage of signs, except the regular state of the bowels, will be recognized as the frequent precursors of stricture of the œsophagus, which I thought it my duty to intimate to the patient, that he might be alive to such admonitions.

By the use of leeches to the side of

the throat, and by saline aperients, the ulcers healed, and all the other signs abated in about ten or twelve days.

In November of the same year, and in February 1827, I was again consulted by this gentleman, on account of some dyspeptic symptoms, which were soon relieved by medicine, his body being as usual, naturally and freely open every day. From this time, I saw nothing more of him for twelve months, when, in February 1828, he again applied to me, on account of his usual dyspeptic complaints, but with this difference, that his bowels, which had been exceedingly regular all his life, were now sluggish, and required the frequent use of aperient medicine. On this occasion, I prescribed the comp. rhubarb pill of the Ed. ph. which proved effectual, and together with other treatment, gave him so much relief, that again I heard nothing of him for five months, when, in July 1828, he called upon me, and complained much of flatulence, acidity, and irregularity of the bowels. He was this time also very much relieved by aperients, but the action of these medicines was not so certain as formerly; and when the bowels were not freely moved, he suffered much from fulness.

His symptoms, although relieved, returned whenever he relaxed in attention to the bowels; on which account, together with the favourable season of the year, I advised him to go to Cheltenham. The Cheltenham waters acted like a charm; the bowels emptied themselves freely every morning, and his appetite and digestion became exceedingly good, as did his spirits and general health; but immediately after he had quitted Cheltenham, the irregularity of the bowels returned, and with it all the dyspeptic troubles; and as from these he suffered considerably, and from his age and sallow face, and obstinate complaints, there was reason to apprehend that organic disease was establishing itself, I proposed a consultation, and the friends fixed upon the late Dr. Armstrong.

The Doctor and myself examined the abdomen very minutely, as I had done before, without being able to discover any indication of disease: pressure was borne in every part, and the only uneasiness complained of, except griping, was a pain which sometimes shot through the upper part of the sacrum. Blood was directed to be abstracted

from this part by cupping, and, in addition, an alterative aperient plan was agreed upon; but these measures not being followed by amendment, it was proposed to ascertain if any cause of obstruction existed in the rectum. On first introducing the finger into the gut, no trace of disease was discoverable, but by passing it forward as far as was practicable, I met with a hard immovable tumor the size of an egg, and further backwards and upwards, I reached with the tip of my finger, a contraction of the bowel, having an opening not larger than a swan quill, surrounded by a hard knotty structure, which altogether exactly resembled a schirrous os uteri.

The case was now made out, and I recalled to mind the tendency to stricture of the œsophagus, manifested upwards of two years before.

Saline aperients, diluted in imitation of Cheltenham water, were now prescribed, and succeeded very well in evacuating the bowels.

A mechanical obstruction having been discovered, it was deemed proper to take the opinion of a surgeon as to the practicability of giving relief by a bougie or otherwise, and the late Mr. Wadd was called in. On his first examination, Mr. Wadd did not reach the disease, but when after several days, he satisfied himself of its existence and malignant nature, he gave it as his opinion that surgery could do nothing. Saline aperients were laid aside and castor-oil substituted, which, although it excited the action of the intestinal canal, did not procure evacuations: the muscular efforts of the intestines were most violent, and gave rise to excessive spasmodic pain; the intestines could be seen and felt to move under the integuments, making ineffectual attempts to force the feculent matter through the stricture, and the agony was so great during these spasms, that the patient desired death. The spasms were much allayed by large doses of laudanum, but were, nevertheless, succeeded by a sharp attack of inflammation, which did not subside for several days; and when the patient had struggled through this danger, it was only to encounter similar torture at some early period. Extreme difficulty was always found in procuring evacuations, and being driven, as we were, to extremity, further surgical advice was desired, in order to consider, a second

time, the practicability of facilitating the evacuation of the colon. With this view, Mr. Copeland, Mr. Brodie, and Sir Astley Cooper, were consulted in succession, and all concurred with Mr. Wadd on the hopelessness of the case, and the inexpediency of surgical interference. Mr. Brodie and Sir Astley Cooper did make some attempts to pass a bougie, but did not feel justified in persevering, lest they should rupture the intestine.

Injections and saline aperients were had recourse to unremittingly with partial success; the violent spasms returned frequently, and the most severe were followed by inflammation. The violent contractions of the intestine constituting the spasms, were always more or less relieved by laudanum; but opium in this form made the mouth and tongue dry, and was followed by head-ache and languor. From these ill effects, the liquor opii sedativus was free, but the most efficacious preparation was the acetate of morphia in the form of a pill, and in the dose of from  $\frac{1}{8}$  to the  $\frac{1}{2}$  of a grain, repeated as circumstances required. The last preparation was found a most valuable medicine, and never failed to mitigate the excruciating pain and other sufferings of the patient's last days.

In this way the patient lived on, passing scarcely any feculent matter, and suffering pain and inflammation by turns till the 20th of February, 1829, on which day the spasms returned violently about six o'clock in the morning, and soon after seven the patient felt a sudden and dreadful pain dart from the left side across the belly above the navel, which he compared to the discharge of a pistol. Quickly afterwards the belly became tense, the respiration difficult, and the powers of life depressed. It at once occurred to me that the colon had given way above the stricture, which I stated to the friends, and prepared them to expect the rapid dissolution, which took place in the course of eleven hours.

*Sectio cadaveris.*—The abdomen being opened, a large quantity of feculent matter of soft consistence was seen lying among the intestines and upon the mesentery, and was found to proceed from a transverse rupture of the colon, about an inch long, at the spot from whence the violent pain darted. The whole of the colon was filled with fecu-

lent matter of the same kind; the sigmoid flexure was seen stretching across the brim of the pelvis to the right side, when it turned quickly upon itself, and terminated in the diseased portion, which was situated directly under the promontory of the sacrum. The diseased part was about the size of an egg, and consisted of a scirrhus degeneration of those structures of the intestine situated between the mucous and peritoneal coats. The aperture of communication between the colon and the rectum, through the diseased part, scarcely equalled the size of a swan-quill, and had a curved direction, which proved the correctness of the opinion, that force used in attempts to pass a bougie would be likely to rupture the bowel. The lower opening looked backwards and downwards to the hollow of the sacrum, and its margin was knotted and irregular, as has been described. There were adhesions of the sigmoid flexure to the small intestines, and the scirrhus mass was adherent to the sacrum.

#### CASE II.—*Annular Contraction of the large Intestine.*

Of the second case, which was an annular stricture, I regret that I am only able to present a few particulars, not having the means of obtaining the early history. It occurred in a female pauper in Covent-Garden workhouse, who had been admitted three weeks before her death, in a state of extreme emaciation, and with a remarkably distended flatulent abdomen; she passed scarcely any feculent matter during the three weeks, and was constantly vomiting, so that nothing, except brandy and water and similar beverage, could in any way be retained on the stomach.

*Section cadaveris.*—Before the abdomen was opened, traces of the convolutions of the intestines were evident, by corresponding elevations of the integuments: these convolutions were found to be distended with gas, and the colon was full throughout of soft feculent matter; and at the termination of the sigmoid flexure in the rectum was a circular contraction of the bowel, forming the annular stricture. There was no thickening or disease about the part, and the contraction had the appearance of the bowel tied with a ligature, except that there were neither folds nor puckering.

*Observations.*—The ulcerations, the heat of the mouth, and trouble in deglutition, detailed in the history of the first case, shewed a condition of constitution prone to morbid action, which, having first fixed on a part of the digestive canal, determined that canal to be the eventual seat of disease.

A very prominent circumstance in the dissection of both these cases, was the soft consistence of the feculent matter, particularly when it is remembered that, from the slow accumulation, the feculent matter had been lying in the colon for several weeks in the first case, and in all probability for several months in the second. This is the more curious, because in ordinary constipation of the bowels, the feculent matter becomes hard and knotty in eight and forty hours, sometimes in twenty-four, and continues so till it is evacuated; hence it occurred to me that the soft consistence above alluded to, was probably one of those remarkable provisions which nature is often observed to make against disease, and if this is the case, the same soft condition of the retained fæces may be expected in all cases of stricture. Experience, however, does not afford me a sufficient authority of facts to come safely to a conclusion on this point, but the probability which I have expressed is much strengthened by two cases, one of which occurred in private practice, and was mentioned to me by Mr. —, a pupil of Guy's Hospital, who witnessed the dissection; and the other in a patient in the same hospital, in both of which the accumulated fæces were in the same soft state. I do not know that this circumstance has been hitherto noticed, nor can I find in the works upon stricture of the rectum any evidence that bears satisfactorily on the question.

Did the fæces undergo the same change as in ordinary cases of constipation, there would be no possibility of evacuating them through a stricture, and the irritations and accumulations would be quickly and uniformly fatal; whereas the reverse is a matter of daily observation. The sympathies by which this usual change in the fæces retained in the colon is prevented, are the more remarkable, because they influence only the part of the large intestines above the stricture, for the soft feculent matter which gradually oozes through the contractions into the gut below, very



soon becomes solid and figured, as I had an opportunity of witnessing in the first case, in which it was not uncommon for solid figured pieces to come away, although all above the stricture was quite soft, as seen by dissection. This last fact is also mentioned by Mr. White\*.

The soft feculent matter was also of a most healthy character, being homogeneous, and containing an abundance of good bile: from which it may be concluded that digestion was perfect, notwithstanding many of the symptoms said to be indicative of indigestion were urgent, as flatulence, fulness, acidity, and eructations; whence it is apparent that the sufferings usually referred to the stomach, may arise from another cause than disorder of that organ.

In both instances the patients died from the mechanical obstruction: in the one the disease was not malignant, in the other the malignancy had not come into operation, the patient having died before the destructive effects of cancer had taken place, as ulcerations, sloughing, discharge, and sympathetic irritations and fever: the subject for consideration, therefore, was the treatment of the obstruction; the observations on which refer only to the first case.

The eminent surgeons consulted were unanimous as to the inexpediency of attempts to force a passage by the bougie, owing to the situation as well as to the malignancy of the disease; in which opinion all must concur, who have witnessed the torture that attends the use of a bougie in scirrhus disease of the rectum, and which is not recompensed by any benefit: this stricture not admitting of dilatation, the effect of the bougie is to bruise and hasten ulceration, or increase it, if present. Although the most desirable means by way of operation, was the introduction of a hollow tube through the stricture, to facilitate the passage of injections, yet this was found impracticable, the distance of the strictured part from the anus being too great to admit of the finger as a guide, and without this, the capacious and yielding rectum left no chance of effecting the passage of such an instrument. In this dilemma, and in my frequent consultations with Mr. Wadd, I sug-

gested for discussion the propriety of making an artificial anus, which, although he discouraged, I cannot but think might be attempted under favourable circumstances as regards the operation, and urgent circumstances as regards the prolongation of the patient's life.

It may be said, that between the two evils of a stricture and an artificial anus, it is difficult to choose; to which I assent generally; but when the patient's life must fall a sacrifice to the mechanical obstruction, and when the prolonging his life for a few months only is of great consequence to his family, the suggestion is worthy the consideration of surgeons; for in the first case, the malignancy of the disease would not have destroyed life for months, in all probability; and in the second case, there being simply an annular contraction, life would have been preserved by an artificial anus, which would have permitted the regular evacuation of the bowels. To render the operation justifiable, the colon should be empty, and the means of attaining this end are the object of the medical treatment of stricture generally.

All are agreed that the aperients which must be necessarily given, should be of a mild character, and the recommendations of authors who have treated on the subject, are limited to castor oil, senna, and sulphur; thus leaving unnoticed saline aperients, which, as will presently be seen, are the most efficacious. These medicines, castor oil, senna, and sulphur, although desirable from their mild qualities, are very uncertain and ineffectual in cases of stricture: it is true they promote a moderate, and so far, a proper peristaltic action of the intestines, but as they do not render the fæces watery, this action is not followed by sufficient evacuation, and therefore not by sufficient relief. Sulphur is objectionable on other grounds: it has been known to form into balls when taken in large doses, and in this way may add to the mischief. The same objection applies also to magnesia, which has been found accumulated in a large quantity above the stricture.

While the subject of the first case was at Cheltenham, and taking the waters, the evacuations were so thin that the colon emptied itself effectually every day, and under these favourable circum-

\* Observations on Stricture of the Rectum, 3d edition, page 37.

stances the patient lost all complaint and improved surprisingly. This first suggested to me the use of saline aperients, which were given in the form of Seidlitz powders and of sulphate of magnesia, in a very diluted solution; and they were found to operate much more pleasantly and efficiently than other aperients. These, however, and the Cheltenham water itself drank in town, were by no means so certain in their operation as the waters drank at Cheltenham, owing, no doubt, to the want of auxiliary circumstances which are to known to favour the operation of mineral waters, as change of scene, absence from the fatigue and anxiety of business, early rising, and exercise. On one occasion, when castor oil was substituted for salts, its effect was exceedingly injurious; it duly excited the action of the intestines, but as it did not render the fæces watery, they could not pass the stricture freely, and the consequence was violent spasmodic pain and vomiting.

Drastic and heating purgatives are very properly objected to in all cases of stricture; nevertheless, the distress of the patient on one occasion was so great for the want of evacuations, that a person of very great practical attainments was induced to propose the administration of croton oil, the propriety of which was much discussed, on account of its irritating properties and violent action; but its employment being much urged by the proposer on the score of its unrivalled purgative power in other cases, it was exhibited in the dose of one drop, which was repeated in the space of half an hour. The effect, as was anticipated, was nearly fatal; it produced most violent contractions of the intestines, and spasmodic pains, with a distressing heat along the whole alimentary canal, and constant and urgent, but ineffectual efforts, to go to stool, the scanty evacuation consisting of nothing more than a bloody secretion from the rectum, the product of excessive irritation\*. The violent action of the intestines led one to fear a rupture of the colon, of which

the sequel of the case proved there was great danger.

In the medical treatment of stricture of the large intestine, then, saline aperients are the best and most efficacious; and where the disease does not admit of relief by surgical interference, the physician would best consult the interest of his patient, by urging him to reside at Cheltenham or Leamington, and by the aid of warm bathing and of drinking the waters regularly, to avail himself of the means which will most certainly mitigate his sufferings and prolong his life\*.

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#### DUTY ON THOSE ENTERING THE MEDICAL PROFESSION.

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*To the Editor of the London Medical Gazette.*

SIR,

I NOTICED a letter in your journal of last Saturday, signed "A Surgeon and Apothecary," recommending that some heavy fee should be imposed on those who entered this noble profession. Now, sir, I ask you whether the practical fulfilment of such a plan would at all benefit us? Would your correspondent have the profession filled with no one but peers and marquises? Let him remember how many men have risen from the lowest occupations to the most splendid fame—men who perhaps had not two hundred shillings, much more pounds to give away when entering the profession. Let him consider how many geniuses he would have quashed; how many talents he would have been the means of rendering obscure; and I think he will then consider that his argument is without foundation, his proposal without judgment, and his publishing it a still greater proof of his rancour towards poor but well-educated students.

I am, Sir,

Your most obedient servant,  
A WELL-WISHER TO THE GAZETTE.

[We do not feel called upon to volunteer an opinion on all the subjects discussed in the pages of the Gazette, but as our present correspondent makes an especial appeal to us, we have to state,

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\* As from the vast accumulation of feculent matter found on dissection it was impossible that any particle of the croton oil could have reached the rectum, the excessive irritations must have been the result of sympathy, which may go far to explain the phenomenon of the inflammation of the rectum, which occurs in cases of poisoning from arsenic.

that though we think the letter of "A Surgeon and Apothecary" contained some very just observations on the present state of the profession, yet his plan of obviating the evils of which he complains, is neither politic nor practicable. —E. G.]

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COLLEGE OF PHYSICIANS,

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*To the Editor of the London Medical Gazette.*

SIR,

I AM rejoiced to find, by an article in your valuable journal for the 1st May, headed, "College of Physicians," that curiosity; the grand promoter of information, has been excited in the mind of a Licentiate of the College of Physicians of London, with regard to the payment of an item of 32*l.* included in the admission fees. Your correspondent very naturally asks, *if this sum, or any part of it, goes to the support of the library?* which you answer in the negative: what then becomes of it? The fees to the president, censors, registrar, beadle, &c. &c. are quite independent of this sum. If it be to preserve the privileges of the members of the College, and to secure to them, and to them alone, the medical practice of London, it totally fails, as we every day find members of the College of Surgeons prescribing in cases purely medical, when we well know that neither their education nor their examination is by any means adequate to their engaging in medical practice. The candour of your observation with regard to the library I admire, at the same time I cannot help considering it a reflection on the College of Physicians of London. Surely such a College ought to keep pace with the science of the day, and every medical publication worthy to be referred to should be found in its library; which library ought, I conceive, to be for the use of the licentiates who are members, as well as of the fellows: for what licentiate would choose to put himself under a personal obligation to a censor for the use of the very library of the College with which he has associated himself? I trust, ere long, to see this, with many other apparent illiberalities, abolished, and hope the highly-cultivated minds of some of the fellows will in-

cline them to my way of thinking, for medicine is not now what it was in the days of darkness when the present College was founded; and the physicians who have most tended to promote medical science during the last forty years have certainly not found their majority in the fellows.

I am, Sir,  
Your very obedient servant,  
A LICENTIAATE.

27th May, 1830.

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ANALYSES & NOTICES OF BOOKS.

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"L'Auteur se tue à allonger ce que le lecteur se tue à abrégé."—D'ALEMBERT.

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*A Dissertation on the Influence of Heat and Humidity: with Practical Observations on the Inhalation of Iodine, and various Vapours, in Consumption, Catarrh, Croup, Asthma, and other Diseases.* By JAMES MURRAY, M.D. M.R.C.S.

EVERY one knows the fondness with which a young medical man cherishes his maiden effort of authorship, in which he first puts forth his strength in support of some favourite theory, or some paradoxical novelty, by means of which he hopes to take the world by surprise. The dissertation now lying before us is pretty much of this description; it was originally an inaugural effort; the germ of it was a thesis presented at Edinburgh, about two years ago, for a medical degree; but it is now offered to the public in a very enlarged and comprehensive form, exhibiting a multitude of opinions on a multitude of subjects that have occupied the mind of the author during a lengthened experience. For though a young graduate, Dr. Murray is an old practitioner; he confesses to upwards of some twenty years novitiate at least, and of course has no particular claim on the indulgence of his critics. Neither do we think he requires it much; for though there are few points in physiology and practice that he does not touch on somewhere in his dissertation, yet it must be allowed that the bearings of his subject admit of great latitude, and are sufficiently ample to embrace a great



variety of topics without confusion or embarrassment. It is, in fact, a record of the opinions of the author entertained at an important period of his life—opinions very frequently fanciful and baseless, generally ingenious, but seldom or never profound.

The influence of heat and humidity is considered in a threefold point of view; and this induces a division of the work into three parts. Part I. treats of the effects of those agents on medical substances; Part II. their effects on food; and the last part treats of the influence of heat and humidity on the human body.

Our remarks and extracts shall be chiefly confined to this last part. It contains a theory of animal heat in addition to the thousand and one theories already in existence on the same mysterious subject. Dr. Murray's views are curious, although altogether conjectural; but lest we might not do him justice by a short sketch of his theory, we shall present the reader with some extracts from the book itself.

“Some experiments made on dilution and temperature lead me to conclude that the solids and fluids have, in a living state, a great attraction for water. In this manner I venture to account in a considerable degree for the continued *expenditure* and *renovation* of animal heat. If through the widely extended surface of skin and lungs, the blood receiving the aqueous vapour from the air, combines with and fixes it, in the state of simple water, or of new combinations of its elements with our solids and fluids, how much caloric must be thus set free? Suppose a given quantity of aeriform water in the atmosphere to be combining with the substances of our system, the absorption and condensation of this vapour will contribute caloric warmth to supply a considerable portion of the extensive expenditure of animal temperature. But if it be still further granted, that the skin and lungs have the power of taking up vapour, and that the blood chemically fixes this vapour, either in solid or fluid combination as a hydrate, the caloric of fluidity must then be disengaged. Add to fresh quicklime, or sulphuric acid, a due proportion of water, and you observe how abundantly caloric is liberated. As water forms a hydrate of lime, and gives out heat, why might it not be inferred, that it

may combine in the mass of our solids with the principles of their particles, and justify such language as a *hydrate of fibrin* in the blood and muscles, and a *hydrate of lime* or *gelatine* in our bones. Our mass of matter is almost entirely water; our elements absorb it on all sides.

“Though the laws of life sometimes are supposed to reject chemical regulations, and it is said we may have free carbonic acid and free caustic soda agitated together, but not joining in our veins, still the notion that the blood can unite the vapour of water from the air, in a solid state, with the principles of our bodies, is not improbable, even when the temperature is above that of the vapour itself which is inhaled. Many proofs of such condensation might be adduced. Lime will take up and solidify water from the air, long after the temperature of the combined hydrate is above that of the lungs; and salt dissolved in water will prevent it from boiling until it reaches 13 or 14 degrees above 212°.

“Numerous examples could be adduced to show that caloric must be generated in some way different from that said to be produced by respiration. Persons have been known to drink ten gallons of cold water during a day, which was soon raised to their own temperature, a difference of 40 or 50 degrees. Dr. Good says, 400 pints of wine and water have in some cases been swallowed daily. In many instances, the expenditure of caloric is far greater than the more common theories would account for.

“But whether we attribute the evolution and uniform preservation of regular animal heat to the junction of oxygen and carbon in the circulation, with Crawford and most of the enlightened modern physiologists—to the meeting and action of these gases in the lungs, with Dr. Black and Lavoisier—to the production of heat from food during nutrition, with Descartes, Franklin, Rigby, and Hunter—to galvanism and nervous influence, with Philip, Brodie, and many others—or to the liberation of 1000 proportionals of heat from the solidification of vapour, when condensing to form hydrates in our solids or fluids, as I have ventured to set forth,—whatever be the source or means which regulate our temperature, whether any, or none of these, or all of them com-

bined, we should remember, that the end of our speculations should be, to ascertain the causes of altered conditions and consequent disorders; and our next aim, to keep in view the great object of arriving at some rational means of altering, alleviating, or removing the untoward changes which have occurred in disease, and superinducing the former healthy state, or one as nearly as possible approximating to that of natural salubrity or healthy disposition."

This chemico-conjectural theory of the formation of animal hydrates seems scarcely to require any very critical remarks of ours upon its merits. We pass on to other topics equally important—more comprehensible—and perhaps quite as well handled by the author. To us, we will confess, one of the strongest recommendations of the volume is its extraordinary variety; we find on turning over its pages the subjects of baths, tea and coffee drinking, and difficult labours discussed, "with a most learned spirit of observation."

We perceive the Doctor at one moment engaged in pronouncing on the influence of the *par vagum* in digestion, and the next, exerting himself in the cause of temperance, by denouncing drunkenness, and crying up the practical morality of water drinking. But, seriously, we are much pleased with his views of the application of iodine: he claims the merit of being the first to propose it—we question not his claim; it is a simple and easy application, and in the distressing maladies for which the author declares it to be a most efficacious remedy (if used in reasonable time), we really think it deserving of a fair trial.

"The valuable property possessed by iodine, of subliming where moisture is present, below the temperature of boiling water, and of remaining diffused at low degrees of heat (even that of the atmosphere) when humid, entitles it to attentive consideration as a remedy by inhalation. Add to this its well-known powers in removing scrofulous affections and dissipating tumors, rendering the skin more insensible, and pain less acute; giving it claims to minute investigation as a local remedy in complaints of the lungs of a tubercular or scrofulous character or disposition, as well as to ulcers in those organs requiring for their cure an altered action or condition."

With regard to its effects generally, the author informs us, that though he sometimes used it in cases where no ultimate hopes of recovery were entertained, yet it contributed even here to procure at least temporary relief; and aided probably by the uniform temperature kept up its diffusion in the apartments, it never failed to lessen the severity of the cough, to promote easy expectoration, to diminish the frequency of the pulse, and whether from possessing some soporific property in vapour, or from the comparative ease afforded, there was evidently observed a greater disposition to repose.

The manner of filling an apartment with the iodine vapour is extremely simple. A cup or opened phial, containing moistened iodine, is suspended in the jet of steam which proceeds from a tube attached to a common boiler. It sublimes in its characteristic violet gaseous form. In summer, a small cup of moistened iodine, set in a bowl of hot water, elevates abundance of the medicine about the bed. A stream of it can be directed by a thin glass pipe over the patient's face, its great specific gravity causing it to fall and be inhaled. An atmosphere of iodine vapour and that of water mixed with air, can, in fact, be regulated to such strength as the patient finds agreeable; and the apartment reminds you, on entering, of the smell arising from kelp kilns burning marine vegetables along the coast.

Some illustrative cases are appended.

Before we conclude our notice of this interesting volume, by the way, we have just read the new mode of performing the operation of bronchotomy (!) recommended by the author, but which our limits preclude—we will extract an amusing account of Dr. Murray's favourite practice in the treatment of scalds. It will be seen that he is partial in this respect at least, to the homœopathic system; for our parts, however, we are much "of the same opinion still," advocates for Mr. Earle's plan.

"Passing one day through Talbot-Street, my attention was arrested by loud screams. On reaching the room of the house from which they issued, I found that a boy had slipped off a chair into a pot of boiling broth, which had just then been set off the fire on the floor. Both legs were immersed for some moments up to the knees. His

mother having extricated him, whether with the instinct of nature or from whatever motive, she plunged one of the limbs into a deep can of cold water: at the moment I entered, the other was just about to be immersed in a similar vessel. The instant of danger is not one for deliberation. I at once laid hold on the scalding leg just dipping into the frigid pail—held it up—threw into the vessel a few ladles of the boiling broth—quickly introduced the limb into this warm mixture, and retained all the scalded part under its surface. Pain was certainly increased by this procedure—the plan was neither congenial to patient nor parent—still I persisted, notwithstanding the murmurs “not loud, but deep,” which the busy bystanders circulated unsparingly around. This was the right leg. The left was kept by the poor mother of the boy in the cold water. She had the satisfaction to hear that her plan was removing all the pain, whilst mine was thought a repetition of the scalding a second time. Here, however, was a case for conviction. Two limbs of the same individual, both equally scalded, immersed the same period of time, and the same height, in boiling broth, were almost accidentally submitted, the one to the cold, the other to the warm mode of management. Setting aside any impressions on the system, I persisted in obtaining topical fair play for the comparison. When the limbs were about an hour immersed, they were folded up in cotton, and the patient was then laid in bed. The right limb was red, and inflamed, and painful; the left paper white, puffy, and insensible. Next day it was evident, even to the prejudiced attendants, that the limb treated by me maintained its circulation throughout its entire surface; whereas that of the left had ceased through all the integuments. My leg and foot, as they were called, were well in a week. The mother’s limb lasted long enough, sloughed, and threw off portions of skin and sphacelated cellular membrane for months. The recovery of course was slow, and the surface scarred with seams and cicatrizations.”

One thing we cannot help noticing as we take our leave of this author—the strange tone of half-apprehension, half-defiance of his critics, which he maintains in his preface, and in many parts of his book. It put us strongly in mind

of Sir Fretful Plagiary’s vein. Whether or not he has equal cause with that worthy knight for his extreme sensitiveness, we will not undertake positively to decide, but we will take leave to say that “it looks very suspicious.”

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## MEDICAL GAZETTE.

Saturday, June 5, 1830.

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“*Licet omnibus, licet etiam mihi, dignitatem Artis Medicæ tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso.*”—CICERO.

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### THE LONDON UNIVERSITY.

THE fate of the London University seems to hang on the medical school, and if we may judge from the extraordinary exertions made to get up this department, the event is not contemplated without anxiety. It is not a little remarkable, that this institution appears to have failed in what was most wanted, and succeeded in that which was not wanted at all. Certain it is that, as a general school, it has lamentably disappointed the hopes of the proprietors, and that the partial success it has met with in one department constitutes but a feeble prop for so extensive a concern. The first circumstance that offers itself in explanation of this result is, that the University has met with least encouragement from those to whom its advantages and disadvantages may be supposed to be best known—namely, the inhabitants of London; for it is notorious that those to whom its halls are most accessible have been least disposed to enter them. Indeed, had the number of students from the metropolis borne any fair proportion to those from the provinces, the event would have been very different. Now the medical profession is the only one regularly taught within the walls of



the University, which requires that the student should visit the capital before his education can be completed, or at least before he can obtain a license to practise as an apothecary, or a diploma in surgery; and it is from the source thus opened that the chief supply of students has been derived. Indeed the number of young gentlemen from the provincial towns, who have terminated their journey in the vicinity of Gower-Street, would seem to shew that the reputation of the University stands higher at a distance than in its more immediate vicinity. In this way, we presume, is to be explained the fact, that, of twenty-seven medals distributed the other day, three only were bestowed upon pupils resident in London.

We have been led to these reflections from witnessing the late distribution of "honours" to the medical pupils; a ceremony well calculated to produce an imposing effect,—the purpose for which it is obviously intended. Sir James Graham presided on this occasion, and did it well. We particularly admired the ingenuity with which he turned his varied compliments to the successful candidates; his concluding address, too, was brief, gentlemanly, and pleasing. Yet was the whole very unlike what our associations are familiar with; it wanted the dignity which gives so impressive a solemnity to the analogous ceremonials of an University of the olden stamp. There was a boyishness too in the kind of "honour," reminding us of the similar medals given at schools to the most deserving scholars, and from which the idea has been rather too closely copied. We went with an undefined persuasion, from what we had heard, that we should see some fortunate candidate presented with an appointment to India, or some equally substantial honour. Neither can we compliment the professors on the figure they made on this occasion; it was such as naturally suggested the

question, whether the pupils had been attracted by the accomplishments of their teachers, or by the "pomp and circumstance" of the situations which they held. There were one or two exceptions to this, it is true; but these only served to render the deficiencies of the others more apparent. Many of the professors, indeed, absented themselves, and there were fewer of the patrons of the institution present than on the corresponding ceremony last year—a circumstance which, we presume, is to be attributed to the dissensions which prevail among them.

In reading the report of the Medical Classes on the day of the ceremony above-mentioned, the Warden took occasion to introduce some extracts from a document lately agreed on by the Council, and which will be found in a former number of the Gazette, (127). It is, in fact, a manifesto of the conditions on which they intend to confer a general certificate of attendance and acquirements, under the imposing title of a diploma. It further announces the important piece of intelligence, that this education is especially designed to suit the *General Practitioner*—and that, to use their own words, "until this University can give a physician's degree," it is opened as the grand emporium for the accommodation of "by far the largest class of the medical profession." The Council, it seems, have taken into consideration the wants of the general practitioner, and most disinterestedly hold it to be "a great duty" to supply them. All this is exceedingly contemptible: the Council of the London University know—or ought to know—that, as a medical school, their institution was wholly uncalled for;—that there were, and are connected with the great hospitals in London, schools at least as good as theirs; and that the "great duty" of providing for the education of surgeons and general practitioners was not left

for them to fulfil. It were more judicious not to provoke too rigid an inquiry into the foundation of those claims on which they would arrogate a superiority which they do not possess, or force a comparison between their professors and the private lecturers in London, among whom are to be found some of the most eminent physicians and surgeons of the metropolis. Besides, granting them to equal the most experienced and successful among our long-established lecturers—and it is granting more than they are entitled to—still would the advantages to be derived from the immediate connexion of precept and example—the constant appeal from theory to practice—which is made, and can only be made, within the walls of an Hospital—turn the balance against the University, in the eyes of those whose object is to acquire an intimate acquaintance with the business of their profession. An Hospital constitutes a living museum of disease; and when this is connected, as at most of these institutions it now is, with abundant opportunities of pathological investigation, it gives to their schools an immeasurable advantage.

As to the rest, if appending a few letters after their names be considered by young gentlemen as an advantage, we would advise the physicians and surgeons connected with the hospital schools forthwith to confer diplomas. We should thus have “Masters of Medicine and Surgery” in the *University* of St. Bartholomew’s—in the United Colleges of Guy and St. Thomas—or, what would come nearer the mark, in the *London University* at Mile-End-Road. Should this system of conferring degrees be carried into effect by private teachers, such as those of the *London University*, it will degrade science, and bring such distinctions into ridicule.

The interests of the College of Physicians and of the Society of Apothecaries

are pretty well defended by law from the effect of these innovations; not so the College of Surgeons—their diploma is honorary—and we doubt not that the Council of the school in Gower-street had this in mind in contriving their diploma. Some, they have conjectured, will prefer to become “masters” in surgery to any less imposing designation; and if the government should persist in laying a duty of 10*l.* on the diploma of the College of Surgeons, without giving them any equivalent advantage, while they suffer the certificate of the University to pass untaxed, as the deed of a private association, (in which light they regard that institution,) then may the Court of Examiners keep holiday, for their labours, we suspect, will be marvellously light. If the Council value the interests of surgery, let them look to it.

The pages of this journal have been open to the commendations of the *London University*, and a reference to various former articles will shew that we have spoken of it fairly and without prejudice; but when we see a set of gentlemen forming an academy on speculation, which they are pleased to call a *University*—an absurdity to which we long ago drew attention (*Gazette*, 11th October, 1828,)—when, not content with the misnomer, they endeavour to keep up the deception by talking of conferring degrees which they have no more power to bestow than any other joint-stock company—and when they have recourse to puffing advertisements of themselves, and implied depreciation of others, to enhance the value of their property;—then are we reluctantly compelled to express our disapprobation; nor are we free from misgivings as to the stability of a concern which at so early a period of its existence has recourse to so much quackery for its support.

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## THE KING'S PROFESSIONAL ATTENDANTS.

RATHER more than three years ago, it was very gravely stated in the *Lancet* that Sir Astley Cooper had been sent by the King to visit his Royal Highness the Duke of York, on which occasion he prescribed something which had produced marvellously good effects;—and now we are told that his Majesty is taking the same remedy with “great benefit.” To those acquainted with the manner in which the practice of our profession is conducted, it is almost unnecessary to state that there is not one syllable of truth in this story from beginning to end. Sir A. Cooper *neither prescribed nor suggested any internal remedy* during his attendance on the Duke of York, and was called in solely in consequence of his Royal Highness yielding to the repeated request of Sir Patrick M'Gregor, who did not like that Mr. Simpson and he should have the responsibility of the surgical part of the case after mortification of the legs had come on. The prescription too—which the Editor of the *Lancet* seems to think something extraordinary—by his own shewing, was nothing more than blue pill and squill!! a combination in such common use that it would have been wonderful indeed if it had been left for Sir Astley to suggest it.

It is curious that the observations which we made last week contained an answer, by anticipation, to the article which simultaneously appeared in the *Lancet*, and that the falsehoods this last contained should actually have gone forth to the world in the pages of various newspapers—*preceded* by their refutation. Since then we have referred to the statements which were made public at the time, and find in the leading article of the *Courier* of January 10, 1827, being three or four days after the decease of his Royal Highness, the

following *official* article, which affords a complete confirmation of all that we have said; and which, as the contrary has been again affirmed, we now insert to prove that the remarks in our last number were not made without a sufficient knowledge of the facts.

“After all that has been said and repeated respecting Sir Astley Cooper's attendance upon the late most-lamented Duke of York, it will surprise the generality of our readers to be assured, as we do now assure them, upon the best authority—

1st. That Sir A. Cooper was called in to see his Royal Highness, at the request of Mr. M'Gregor, on the 16th of October, sanctioned by his Royal Highness, to whom that request had been conveyed by Sir H. Taylor.

2d. That Sir A. Cooper, in conjunction with the two other surgeons, Mr. M'Gregor and Mr. Simpson, administered to the external ailments of the royal sufferer.

3d. That Sir A. Cooper never prescribed any internal remedy whatever.

We do not mention these circumstances invidiously, but only to prevent the public from supposing that the physicians could abandon their province of prescribing to one of the surgeons, and from disparaging the zeal and efficiency of all the other medical attendants of his Royal Highness. This would necessarily be the general opinion if it be allowed to go out to the world that the physicians yielded the important lead to an individual who shared in common, not exclusively, the merit of devoting his zealous unremitting attention to the employment of the best means of saving the valuable life of his distinguished patient. We take this opportunity of adding, that no scarification of the legs ever took place, nor was a blister applied.”

While the story remained confined to the pages of the *Lancet*, in which it originally appeared, it was not thought worth while to contradict it; but having afterwards been copied into one of the morning papers, Sir A. Cooper addressed the following note to the Editor:—

Sir,—I appeal to your candour to



contradict the paragraph in your paper of yesterday, (and which was probably copied from some other) respecting the medical treatment of his Royal Highness the Duke of York, as it contains a statement which has no foundation in truth. I am, yours, &c.

ASTLEY COOPER.

Spring Gardens, Jan. 9, 1827.

So much for this absurd story, which is now renewed by its original author, in despite of the contradiction of the party to whom it refers; and for the obvious purpose of derogating from the royal physicians. Sir Astley Cooper, considered as a surgeon, has attained a pre-eminence so high that nothing but the extremity of weakness could induce him to think of aspiring to a reputation for skill in the practice of physic: and we are persuaded he would just as little have thought of attempting to instruct the physicians in the treatment of a medical case, as they to direct him in the performance of a capital operation.

But why has the name of Sir Astley Cooper been thus impertinently dragged forward by our contemporary? Can any one suppose it agreeable or advantageous to him to have his name blazoned forth in newspapers as one towards whom some slight has been shewn? Or can it for a moment be imagined that the Editor of the *Lancet* is thus sore because the distinguished surgeon to whom he alludes has not been sent for? It is notorious, that while the false impression could be kept up that Mr. Brodie was not in attendance on the King, not a syllable was breathed in the *Lancet* either to remove the deception or to censure the proceeding. But when it became too public to be concealed, or *again*\* to be denied, that his assistance had been required by his Royal master, then did our contemporary, forgetful of the contemptuous and disgraceful manner in which he has been accustomed to speak of Sir Astley

Cooper, forthwith demand why his opinion—the opinion of the “serjeant surgeon”—was not taken? We can answer this:—the same reason which led to Sir Astley Cooper being employed to attend the King when he was not serjeant-surgeon, now leads to the employment of another when he is—the Royal will. During his present illness his Majesty has remained unimpaired in mind, and still is “every inch a King.” Nor can any thing be more absurd than the idea that any “secret” influence, even were it used, could prevent him from exercising a privilege not denied to the meanest of his subjects—that of choosing by whom he shall be attended in the hour of sickness. That he has exercised that privilege, and that his choice fell where it did, is the real cause of the ludicrous tone of disappointment in which the last two or three numbers of the *Lancet* have been penned.

The above details relate to facts which will become matters of history. As to the rest of the article—the demand that the physicians should describe the “symptoms,” and “submit their treatment” to the public, in violation of all propriety, delicacy, and even decency, in order that the Editor of the *Lancet* might be enabled to write comments, and have them copied into the newspapers—this, and a great deal of stuff besides, we pass by, as wholly undeserving of comment. The writer cannot be such a fool as to hope that the members of the medical profession will be blind to his motives or deceived by his hypocrisy.

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## HOSPITAL REPORTS.

### GLASGOW INFIRMARY.

[Concluded from our preceding Number.]

#### *Injuries of the Head.*

CASE III.—John Curbans, aged 21, a slater, admitted 8th September, having

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\* It is not true that Mr. Brodie has been in attendance upon his Majesty.—*Lancet*, May 1.

fallen from a scaffold two stories high on the preceding day, and struck his head in the descent against the edge of a wall. A quantity of slates which came down along with him, fell upon the lower part of his back. He was stunned by the fall, though not rendered altogether insensible, and vomited. There was a wound an inch long through the integuments of the right eyebrow, and another of a triangular shape over the right temple. In this situation the bone was exposed, and the probe could be passed from the wound upwards and backwards, to the extent of three inches.

On admission he had little headache, his chief complaint being a fixed pain at the lower part of the belly, with inability to void urine. The pulse was rather quick. The catheter was used; the edges of the wounds were brought together by means of sticking-plaster; warm fomentations to the belly, and castor oil, were ordered.

The fever, &c. having increased on the following day, he was bled to  $\mathfrak{F}xvi.$ , and had twelve leeches applied to the lower part of the belly, after which he felt considerably easier. The bleeding was repeated on the 10th, and the saline mixture ordered. The pain of belly was less, and otherwise he appeared better on the 11th. The discharge from the wounds was rather copious, but not particularly unhealthy. There was a recurrence of pain in the hypogastrium, with increase of fever, on the 12th, when twelve ounces of blood were extracted from the lower part of the back by means of the cupping-glasses. From this date he did not require the use of the catheter.

Up to the morning of the 21st, when he had a rigor, he continued to do remarkably well, the wounds discharging healthy matter, and he being all the while free from any fever. He had an uncomfortable feeling of pain and tightness around the head, the countenance was flushed, the aspect of the sore was pale, and the discharge thin and scanty. Pulse 112. To be bled from the temporal artery, to have a blister to the nape of the neck, a dose of castor oil, and afterwards gr.ii. calomel three times a day. He was immediately relieved by the bleeding, and on the 22d had no pain of head, and every way felt better. The calomel was continued, and the blistered surface ordered to be dressed with resinous ointment.

24th. "Continues to improve. Pulse 80, soft and of good strength; discharge tolerably healthy; mouth not yet affected."

26th. "Mouth sore; discharge good; otherwise feels well." Omit the calomel.

He had a return of rigor on the forenoon of the 27th, though previously was cheerful, and had taken breakfast with relish. Wound over eyebrow nearly healed; that above temple has a pale glazed appearance, and discharges copiously a brown serous fluid. From

this the probe passes nearly four inches backwards, in which situation there is an elastic fluctuating swelling. This was immediately laid open from the posterior angle of the wound, to the distance of two inches and a half, exposing a considerable surface of the bone bare and rough. Two branches of the temporal artery were necessarily divided, and in this way about  $\mathfrak{F}viii.$  of blood were lost, after which he felt the pain of the head much easier. Pulse 116, sharp; countenance flushed; tongue quite clean; mouth nearly free of mercurial tætor. He was ordered a dose of physic, and to have a blister applied to the head.

The bleeding was repeated to  $\mathfrak{F}x.$  on the 28th, and the use of the calomel recommended every third hour. He passed a good night, and on the following day the pulse had fallen to 92.

30th. "Pain of head gone; otherwise feels easy; pulse 84, calm. Tolerably healthy discharge from wound, which looks clean. Mouth slightly affected. From this date he continued to improve. Ptyalism having taken place, the mercury was finally omitted on the 3d October, after which the gums remained very tender for nearly a fortnight. The pulse kept stationary at 76. Healthy granulations sprung up from the surface of the denuded bone and surrounding soft parts. He was dismissed cured on the 26th October, the wound having been wholly cicatrised for several days previously\*."

The preceding is an instance of concussion both of the spine and brain. Although the fall seemed to have been very severe, yet he suffered but momentary stupor, followed by vomiting. Symptoms of cerebral disturbance did not evince themselves till 14 days subsequent to the accident.

These, as also the unfavourable symptoms which took place on the 27th, when he had a relapse, were ushered in, as is usually the case after injuries of the head, by a rigor, with a glazed, unhealthy appearance of the wound. When admitted he was free from fever, the local symptoms being pain at the lower part of the back and in the hypogastrium. There was also retention of urine, with paralysis of the sphincter ani. These subsided after free depletion, both general and local, fomentations, purgatives, and the use of the catheter. Palsy of the bladder is

\* This man was requested to live abstemiously, and to return immediately to the hospital in the event of a recurrence of any unfavorable symptom. I have not seen him, but am informed that he has been quite well since.

a common effect of injuries of the back ; but in this instance it seemed to be accompanied by actual inflammation of that organ, or of parts in the immediate vicinity. The treatment at first had recourse to was, doubtless, beneficial in lessening the tendency to inflammation of the brain, having lost during that period upwards of forty ounces of blood, so that he was very much reduced by the time the bad symptoms appeared.

The utility of mercury after blood-letting was well marked in this case. The unpleasant symptoms disappeared almost immediately, on the mouth becoming decidedly under the influence of that medicine. At both relapses venesection was not sufficient to remove the pain, &c. Mercury, therefore, may be considered as one of the best auxiliaries to bleeding in the treatment of such cases. To ensure its full effect, however, I am persuaded that the medicine ought to be carried to the extent of producing smart pytalism, as is so beautifully exemplified in the cure of iritis, and of some of the other disorganising inflammations of the eyeball. In addition to its other effects of exciting absorption, &c. it may not improperly be said to act beneficially, partly, as a counter-irritant.

The opinion was long entertained that a bone, when deprived of its periosteal covering, must necessarily exfoliate. The contrary, as I have often witnessed on other occasions, was seen to take place. The surface of the bone granulated, and in process of cure these granulations readily inosculated with those from the surrounding soft parts.

Several other cases of injury of the head were admitted. The following, however, is in many particulars interesting.

CASE IV.—George M'Donald, aged 40, was admitted 27th February, under the care of my predecessor, Dr. Couper. On the 2d January preceding, when intoxicated, he had fallen down a stair, and pitched on his head. He remained insensible for ten minutes after the accident. With the exception of a slight abrasion of the left cheek, there was elsewhere no mark of injury to be seen. He continued at his employment during the first week. He had then a rigor, was sick and drowsy, and affected with severe shooting pain in the forehead and across the temples. At length a small puffy tumor appeared over the upper part of the left parietal bone. This having

extended, was opened a few days previous to admission, and a quantity of matter discharged. In this situation the bone was found broken into several small pieces, and slightly depressed. The integuments were undermined, and the probe grated on rough bone to the extent of two inches round the opening. There was no paralysis, and he seemed perfectly intelligent. Pulse 80 ; bowels slow. He was bled from the arm, had leeches applied to the head, and was purged, with decided relief. The headache again became severe on the 4th March, when leeches were repeated. He remained in the hospital till the 21st April, during which period he was never free of headache. The treatment had recourse to was the application of leeches and cold lotions to the head, the occasional use of purgatives, and an alterative course of mercury. On his leaving the hospital the following report is entered in the Journal: "Has little pain in the head, and otherwise appears in good health. No portion of the denuded and depressed bone has yet come away."

This person was re-admitted on the 16th May. The headache, which had been more or less constant from the time he left the hospital, was now particularly severe. There was no other bad symptom. He was addicted to dissipated habits, and had been living rather irregularly. The sore on the upper part of the skull was about the size of a sixpence. The surrounding scalp was quite adherent. The depressed bone felt rough, and was covered with flabby granulations. The treatment consisted in the application of blisters, and the use of mercury to pytalism. He left the hospital on the 11th June, still affected with headache, though much less severe. No change had taken place on the sore.

He was again admitted on the 4th July, and in the interval had been living very abstemiously. The pain was constant, and so severe that he could neither walk nor stoop. He complained of loss of memory. A caustic issue was inserted in the nape of the neck ; and the edges of the sore on the head, which were inverted, were pared. Two days subsequent to this erysipelas of the scalp and face took place, preceded by a rigor. Delirium ensued early, and he remained very ill for nearly a week. The affection having subsided, healthy granulations sprung up from the surface of the sore, which speedily cicatrised, no exfoliation of bone taking place. He left the hospital perfectly free of headache on the 9th of August. I have not heard of him since the middle of September, at which date he was well, and able to follow his usual employment—a tanner.

The following case happened in private, but may be here mentioned as a striking exception to what generally takes place in si-



milar injuries. It serves to illustrate the fact, that the presence of matter between the dura mater and skull consequent to an injury, is not always indicated and preceded, as Mr. Pott would lead us to suppose, by the spontaneous separation of the pericranium from the skull, and the formation of the "puffy tumor" of the scalp.

CASE V.—A gentleman, aged 21, in descending a stair, fell forwards, and pitched his head against the wall at the bottom of the stair. He was slightly stunned by the blow, and after a few minutes, rose up and walked home. There was no visible mark of injury on the head. He continued in his usual state of health for nearly a month. At length he became affected with headache, vertigo, and other cephalic symptoms. The pulse was about 40. Stupor and convulsions ensued, and he died apoplectic seven weeks from the receipt of the accident.

*Inspection.*—On reflecting the scalp and pericranium, which were every where firmly adherent to the skull, two fissured fractures were discovered on the upper part of the left parietal bone. These were situated an inch apart, and ran parallel to each other, in an oblique direction towards the sagittal suture, where they terminated. The dura mater underneath was separated from the bone, which was rough to the extent of three square inches. This space was occupied by dark-coloured sanies, with a sloughy state of the outer layer of the dura mater. The inner surface of this membrane was of its natural smoothness and colour. The brain, particularly the cerebellum, was unusually soft.

#### NOTE FROM DR. MOTT.

*To the Editor of the London Medical Gazette.*

New York, 25, Park-Place,  
April 30, 1830.

SIR,

In publishing the case of immobility of the jaw, with a drawing of the instrument used for opening the mouth, my only wish was to make known to others an instrument which I had found useful, and particularly adapted to such cases; but I did not anticipate the effect it has produced on your Bath correspondent.

The invention of the instrument used by me was elicited by the case I had to treat, and could not be influenced by any original in the possession of another person, with whom it remained unnoticed, though it may have been invented for centuries.

It is a little amusing that this instrument, thought to be unique, should have produced

its counterpart, and a claim to originality at so distant a period.

Yours, very respectfully,  
VALENTINE MOTT.

#### ROYAL WESTMINSTER OPHTHALMIC HOSPITAL.

ON Monday last a numerous meeting of the subscribers to this charity was held at the Thatched-House Tavern, to take measures for building a new hospital.

The Duke of Richmond was in the Chair. Lord Grantham, Lord Beresford, Mr. Byng, and Col. Wood, M.P., with many other persons of distinction, took an active part in the resolutions passed.

The principal one was to empower the building committee to proceed forthwith to the erection of a new hospital on the ground granted by the Commissioners of Woods and Forests, near Charing-Cross, in Chandos Street. Plans for the hospital were shewn, and the various views of the building committee very clearly explained by Lord Grantham. It is intended to contain thirty beds for in patients, and it is calculated will cost 5000l.

By a report which was laid on the table, it appears that, during the last year, 1624 persons, all ages, have been admitted to the benefits of the charity, making a total of 16,895 since its institution; of these 550 have been restored to sight by the different operations for cataract.

As forming a valuable school for the treatment of a class of diseases which until of late years was almost exclusively confined to a few oculists, the knowledge of which is nevertheless so important to every medical practitioner, we wish it every success. It is undoubtedly an institution which confers great benefits, not only on the poorer classes but on all, by the opportunities for instruction which it affords. They have yet 2500l. to make up to complete the building fund, and we trust it will not be long before they succeed.

Mr. Jewel has been elected Surgeon-Accoucheur to the St. George's and St. James's Dispensary.

#### BOOK RECEIVED FOR REVIEW.

Cholera, its Nature, Cause, and Treatment; with original Views Physiological, Pathological, and Therapeutical, in Relation to Fever; the Action of Poisons on the System, &c. &c. By Charles Searle, Surgeon, of the Hon. East India Company's Madras Establishment.

W. WILSON, Printer, 57, Skinner-Street, London.

# THE LONDON MEDICAL GAZETTE,

BEING A

WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

SATURDAY, JUNE 12, 1830.

## LECTURES ON SURGERY,

*Delivered at St. Bartholomew's Hospital,*

By WILLIAM LAWRENCE, F.R.S.

### LECTURE XLIX.

*Fractures of the Ossa Nasi and Lower Jaw—  
of the Vertebra—of the Sternum—of the  
Ribs—of the Pelvis.*

GENTLEMEN,—Although the exposed situation of the *ossa-nasi*, and the thinness of the lateral prominent parts, might lead you to suppose that they would frequently be broken, the accident is by no means common, and the little which can be contributed by surgery towards replacing and retaining a fracture of the nasal bones is so obvious, that I need not make any further remark upon the subject.

The form and position of the *lower jaw*, and the circumstance of its being covered by little except integument in the greatest part of its extent, renders it very liable to fracture. The lower jaw may be broken either at the anterior arched portion or in its ascending branches, or at the processes in which these rami, as they are technically called, terminate. The rami of the bone are less strong and considerably thinner than the arched part, but they are covered by a powerful muscle, so that fractures of the rami are comparatively rare. The bone is most frequently broken at the strongest, that is, the anterior arched portion.

Fractures of this part may be either *perpendicular* or *oblique*, and they are said sometimes to be *longitudinal*, but I fancy that must be a very rare occurrence. The bone may be broken at one place, or at more places than one; there may be simple fracture, or the fracture may be complicated with an external wound—that is, there may be com-

pound fracture. The fracture too is often attended with a good deal of contusion, ecchymosis, and swelling of the neighbouring soft parts.

The replacement of a broken lower jaw is very easy. By introducing one or both thumbs into the mouth, and by depressing or carrying backwards the posterior part of the bone, at the same time that we elevate or bring forward the anterior part with the fingers, we can in injuries of this kind replace the parts with great facility. The maintaining it in its situation, and the preventing it from moving, are points not quite so easily accomplished, for we can only apply the means of retention on the external surface of the lower margin of the bone; the whole of the inside is removed from our reach, and it is hardly possible for us to make use of any means applied in that situation to assist in retaining the bone in its place. However, this inconvenience is remedied by another advantage, which is, the immediate and firm support which the lower jaw receives from the upper one when the mouth is closed; and the lower being firmly maintained in apposition to the upper jaw, it may be said that under such circumstances it supplies in some degree the place of a splint. The best, and at the same time the easiest mode of retaining a fractured lower jaw in its place, is the four-tailed bandage, which consists merely of an oblong piece of linen, each end of which is split so as to make two ends, or as they are called, *tails*; then the middle or undivided portion is applied to the chin, and so arranged as to embrace the anterior prominent part of the bone, and the two anterior ends are then carried backwards and fastened behind the head, in the way that I now put it on.—[Mr. Lawrence here placed the bandage on himself.] The posterior ends are brought up along the sides of the ears, and fastened over the top of the head, in this way. Thus you can apply force in a circular direction to the anterior arched portion of the bone, at the same time

that you apply force in a perpendicular direction to the base of the bone below. By the combination of these two forces you maintain the bone in apposition to the upper jaw. The bone of course remains steadily fixed only so long as the person keeps the mouth shut; and in order to avoid the displacement which the natural motions of the jaw in mastication, &c. would produce, persons must abstain from talking, and also from chewing food; they must take merely soft food—spoon-victuals, as they are commonly called, until the union of the bone is effected. It has been sometimes found advantageous to do something more than merely apply this four-tailed bandage to the bone—to make at the time something which serves as a sort of splint; that is, you take a piece of pasteboard, dip it in water, so as to make it quite soft, and cut out a piece that will adapt itself to the inferior edge of the bone. Just make a few snips in it, so that it may sit neatly, and in its moistened state bind it on the jaw with a bandage of this kind. When the pasteboard dries it comes off as a case, exactly accommodated to the part. But you will recollect that pasteboard is a roughish kind of substance, and if it be bound firmly on the tender skin of the face, it will irritate and excoriate it. It will be expedient, therefore, to protect the surface of the parts on which the pasteboard is applied, by covering them with soap cerate, or lining the inside of the pasteboard with linen or with soft rag. By neglecting this precaution, and by binding a piece of rough pasteboard firmly on the jaw, I have frequently seen considerable irritation produced—even inflammation and formation of matter have been the consequences.

It happens, indeed, sometimes, from the violence that has been employed, that the fracture extends to the inside of the mouth, to the part where the jaw is covered by the gum, and thus forms a sort of compound fracture, although there is no external opening in the skin. It sometimes happens that a good deal of inflammatory swelling supervenes in this case, and the occurrence of a considerable abscess is by no means unfrequent. Under such circumstances we must make an opening tolerably early, in order to give exit to the matter. It has been recommended to assist the means you employ for retaining the fragments of the jaw together by tying the teeth on each side of the fissure with silk or wire; however, I believe it does not often happen that these means tend to assist the union.

But while describing this accident, I observe that I have omitted to mention the circumstances to you which indicate its existence—the *symptoms*. Now these, in truth, in consequence of the superficial situation of the bone, are very obvious. In the first

place, if there be any displacement of the broken bone, there is an alteration in the appearance of the lower part of the face; the mouth is a little deformed—it appears to be turned aside—it has not its regular conformation; but when you come to examine the row of teeth on the inside of the mouth, you immediately perceive the irregularity that is produced by the fracture; and by passing the hand along the base of the bone externally, you also become sensible of this. Then further—if you take the two portions of the fracture, one in each hand, you can move the bone, and indeed you hear distinctly a crepitus or grating, caused by the broken ends rubbing against each other. This criterion is so very palpable in the case of fracture of the jaw, that it is hardly possible to make any mistake in judging of the nature of the accident. If the bone be broken at the rami or processes, these parts being covered by the thick masseter muscle, it is by no means so easy for us to be satisfied of the existence of fracture. Little, however, can be done under such circumstances for keeping the parts together—you can merely, as in other cases, bind the lower jaw against the upper one, and enjoin quietude till the fracture be consolidated.

#### *Fractures of the Spine.*

The *vertebræ* are not much exposed to fracture, considered *individually*. Their form, their situation, and the way in which they are surrounded by muscles and other soft parts, render it very difficult to have a force applied in such a way as to act particularly on one vertebra without affecting the contiguous ones; fractures, therefore, of the individual bones are rare, though the vertebral column, taken collectively, is liable to fracture—that is, the fracture may pass through the column. In such a case, generally more than one vertebra is involved in the mischief. The body of one vertebra, with the articulating or transverse processes—either of the vertebra above or below—frequently are involved in the case called a fracture of the spine. It is true that both the spinous processes may be broken, or you may have fracture of one of the spinous processes only; this, however, does not take place by any means commonly, for these processes are so covered and enclosed by muscles, that it is difficult to have a force sufficiently powerful to break them applied entirely to one process and to no more. Fracture of the vertebral column generally happens in consequence of the application of some very great degree of force to the body: a person falls from a great height, as from the top of a building, to the ground; or some very heavy weight falls from a height upon the trunk. Now when the column is broken through, the accident may be attended with displacement of the fractured parts, or it may



not. If the fractured parts have undergone displacement, an irregularity may be perceived in the line of the spinous processes, and therefore when you pass your finger along them, you find an interruption in the series of processes—one or more may seem to be depressed or pushed in; or the spine may form an angle at one point, so that one or more parts may project; and this circumstance points out the precise situation where the injury has been received. Frequently, however, though displacement is produced at the time the accident takes place, yet when the force no longer acts upon the spine, it recovers its straight position, and you are not sensible of any inequality in the line of the processes, so that there is no external visible circumstance which will point out the precise spot where the injury has taken place. You can only judge of it by the sensation which the patient describes; but the accident is usually attended with so much pain, just in the situation, that he generally points pretty accurately to the injury. When the column has been displaced, either at the time of the accident or afterwards, it is attended with pressure of the spinal cord, and this pressure produces insensibility and paralysis of all the parts that are seated below the injury. It is this circumstance that renders fracture of the spine so very serious—that renders it, in fact, in general extremely dangerous, and almost necessarily, sooner or later, fatal. A fracture embracing one or more of the vertebræ would be capable of uniting just as well as fracture situated in any other bone of the body, if nothing were concerned except the broken bone; this accident would not be at all more important than a fracture of either of the extremities, but for the great importance of the effects on the spinal cord; and the situation of the cord in the vertebral column is such, that it cannot possibly escape the effects of the injury which I have now described. Even if the spinal cord be not actually pressed upon, the accident will most likely produce the effusion of fluid, or the irritation will occasion so much disturbance in the situation of the spinal cord where the injury has taken place, as to produce effects almost equally serious, though coming on at a remote period. In the great majority of instances, however, the spinal cord receives at the very time of the accident so much injury, as to produce complete paralysis of all the parts that are situated below the seat of injury: these parts are so completely deprived of sensation, that if you pinch or cut the skin, or apply heat to the surface of the body, the patient is not sensible of it; and there is also complete loss of voluntary motion—the patient is not able by his will to influence any muscle receiving nerves from the branches that come from the spinal cord below the injured part. The limbs, there-

fore, and other parts seated below, are totally motionless, and complete insensibility and paralysis are the consequences of this injury. At the same time, the internal organic motions of the part which are necessary for continuing vitality go on—the circulation in the part and the secretions continue—the internal organic life is continued, although the external life, that which consists of sensation and voluntary motion, is put a stop to. The heat of the part is kept up to a certain extent, but not to the same degree as under ordinary circumstances.

This want of power extends itself also to the muscles which belong to the termination of the large intestines, and to the bladder;—the patient has not the power of expelling his urine, which therefore must be drawn off by a catheter;—the muscles of the large intestines lose their power, so that the fæces pass off involuntarily. The distention of the bladder, and the necessity for using the catheter, exist in the early period of the accident; but after a certain length of time the water runs off involuntarily. There is a singular symptom attending the fracture of the spine, the exact cause of which is not found out, or I am not aware of it—that is, a permanent erection of the penis—a state of priapism. I have seen it occur in whatever situation the fracture of the spine has taken place.

Now the *prognosis*, the chance which the patient has of recovering from the accident, and the length of time that life may last after its occurrence, are circumstances that depend materially on the situation in which the injury has been received. In a fracture of this kind taking place in the first, second, or third vertebra of the neck, if it be attended by displacement of any of the broken parts, so as to cause pressure upon the medulla spinalis, it is immediately fatal, because the pressure takes place above the origin of the phrenic nerve, and respiration, therefore, cannot be continued. When the fracture takes place below the three cervical vertebræ, although the occurrence of fracture in that situation paralyzes the intercostal and abdominal muscles, that is, although it paralyzes the greater portion of the muscles that are involved in the act of respiration, still the phrenic nerve is not involved, and for a certain time respiration is carried on by means of the diaphragm. Fracture of the first, second, or third vertebra, is not necessarily fatal; it is only so under circumstances in which it is attended with such displacement as to produce the pressure that I have just alluded to, and then death is the immediate consequence.—[Mr. Lawrence here presented a preparation, and remarked that there appeared to have been a fracture of the first vertebra of the neck—the atlas. There was a fissure running through that part, yet the individual in whom

the accident took place recovered from it; for the atlas and dentatus were completely ankylosed — soldered together by bony union. There the fracture was not attended with any displacement or pressure.]

A case is mentioned by Sir Astley Cooper, in his work on Fractures and Dislocations, in which a boy, three years of age, received an injury about the upper part of the neck, and after this occurrence he was observed not to be able to move the head without holding it with his hands, that is, the head shook, and he took it in his hands to prevent it from doing so. He died at the end of twelve months, but it did not appear from what cause. It was found on examination that the atlas was broken through, so as to detach the ligament which holds the vertebra dentata in its place.

In fracture of the fourth cervical vertebra, or any inferior one down to the beginning of the dorsal, the patient generally will live from 3 or 4, to 7, 8, or 10 days, according as the fracture is situated higher up or lower down. In such a case, the patient performs respiration simply by means of the diaphragm. The power of contraction of the diaphragm is retained; and when the diaphragm contracts, the abdominal viscera are protruded, so that the chest is enlarged on each inspiration, while expiration seems to result from the reaction of the parts; but respiration, you observe, is performed very imperfectly when confined to this mode. We therefore find that the patients speak in a low tone, and they are incapable of coughing or sneezing; they cannot make an effort for passing the fæces or urine; they cannot put the abdominal muscles into action;—in this state life will not long be supported.

I had a case some time ago under my care where the fourth vertebra was dislocated from the fifth, and I may remark respecting such an accident, that dislocation is not to be distinguished from fracture. The patient lived four days. And not long after that period, I had another case in the hospital where the injury was received quite in the lower part of the neck; in fact, the body of the sixth cervical vertebra, with the articulating processes of the vertebra above it, had been fractured, and the body of the sixth vertebra was displaced forward so as to overlap the seventh, and press upon the spinal cord: in that case the patient lived ten days. Patients do not usually survive so long as that after an accident has occurred in the neck.

When the dorsal region of the spine is fractured, the patient will, perhaps, live a fortnight or three weeks. In case of fracture occurring in the lumbar region, the patient may live three, four, five, or six weeks, and in some instances life has been prolonged to a much later period. If I do not mistake, Sir Astley Cooper mentions one instance

where a gentleman survived such an accident nine months.

There is a curious specimen in the College of Surgeons, which was sent by Mr. Harrold, of Cheshunt, where the fracture took place in the spine, just at the commencement of the loins; I think it was the last dorsal or first lumbar that was broken. This patient was kept perfectly at rest; the urine was drawn off for a little time, and after that he recovered a kind of power of expelling the urine himself, which appeared to be effected rather by the action of the abdominal muscles, than by the contractile power of the bladder. However, at the end of six months, he had recovered so considerably that he could sit up in bed, and could nearly dress himself. Although he had still a total want of voluntary power in the lower extremities, he nevertheless had the power of shoving himself down stairs by a step at a time. He died at the end of twelve months. There is a complete bony union—a perfect callus enveloping the body of the vertebra, soldering the pieces together, and what is a singular circumstance in this case, part of the body of one vertebra had been broken off, and driven across the vertebral canal, so as to divide the medulla spinalis completely, the ends being about an inch apart in the preparation. This which I now exhibit is a specimen of fracture of one of the dorsal vertebrae, in which a similar circumstance has taken place. A piece of the body of the bone is broken off, and driven across the column so as to divide the medulla spinalis: this case, then, and that in the museum of the College of Surgeons, shew that a fracture of the spine may recover so far as the fracture goes, and that the vertebrae possess the same power of restoration as exists in other parts of the body.

A gentleman shewed me a curious specimen a few days ago, and asked me what I thought of it: it was a part of the spine, and I said that if I were to give my opinion from merely looking at it, I should say that the spine had been broken, and had been consolidated by bony union; for it had the appearance of having been broken through, and then united;—a formation like rough plastering had taken place at the site of the fracture. He said it had been an injury of the spine. In this instance there was a mass of bone filling up the vertebral canal, and I could hardly see any space in which the medulla spinalis could have remained. He said that it was an instance in which the spinal cord had been completely divided at the situation of the accident, and in fact the present state of the bone shews that it must have been so, for there is not room to pass more than a blowpipe at the situation of the injury. If I do not mistake, the gentleman said, that the patient had recovered so as to walk about; however, it was a complete spe-

cimen of recovery so far as the consolidation of the bone went. There is also a case minutely described by Sæmmering of a fracture occurring in the lumbar region of the spine, where the patient died six months afterwards from mortification of the lower extremities. The injury occurred here in the first of the lumbar vertebræ, and the articulating processes of the last dorsal were also broken through. Here too there had been a kind of rough substance thrown out, and the fracture had become firmly consolidated.

The next question then is—What treatment should we adopt in these cases? In fracture without any displacement, and where it should seem there is no actual pressure upon the spinal cord, but where the cord, soon after the accident, seems to suffer from inflammation—that is, when pain comes on in the situation of the injury, and extends along the course of the nerves which proceed from the cord below the accident, with convulsions and spasms of limbs (for these are the kind of symptoms that occur in consequence of inflammation affecting the spinal cord), we can only have recourse to antiphlogistic treatment. You must take blood locally, adopt other antiphlogistic means, and enjoin absolute rest. With respect, however, to the ordinary run of cases, where we have paralysis and insensibility immediately attending the accident, we must place the patient in a state of perfect quietude, and keep him absolutely at rest. For this purpose the mechanical beds, invented by Mr. Earle and Mr. Amesbury, are particularly well calculated; because you can place the patient in a position which affords the means of relieving himself without any motion of the body: so that there will be no motion of the broken bones against each other.—none of those movements which may be likely to produce pressure on the spinal cord, or that will be likely to produce or aggravate inflammation or irritation in the same situation. Absolute quietude, therefore, is an essential part in the treatment of these cases; indeed it is the most essential circumstance. You may find it necessary to adopt local means of an antiphlogistic character; and these cases do not in general require other means of that kind. You must employ the catheter, so as to draw off the water at proper times, and then, under favourable circumstances, we see that nature is capable of repairing an injury of this sort, so far as the bones are concerned; though want of power in the limbs of course must be expected to remain, when the spinal cord has received serious injury.

A proposal has been suggested for the relief of the spinal cord from pressure in these cases, by denuding the vertebral column in its posterior aspect, and cutting away, with a saw or a trephine, the spinal process corresponding to the situation in

which the cord may be supposed to suffer, under the idea of relieving it by elevating the depressed bone, or taking away at least that part which causes the pressure, in the same way that we relieve the brain from pressure occasioned by a depression of the bone in fracture of the skull.

The great objection to this proceeding is the uncertainty respecting the precise seat of injury and the precise mode in which the spinal cord has been injured, or continues to suffer pressure. I have mentioned to you already, that sometimes there is an irregularity—an obvious prominence of the spinal processes, which may point out the situation in which you may suppose the injury to have been received, and which might lead you to suppose it probable that an incision might be carried, in order to accomplish the purpose that I have just mentioned. But in a great number of instances there is no direction of that kind to guide you, and you will proceed under a considerable degree of uncertainty whether it might be one or another or a third of the spinous processes that ought to be removed. Then you do not know whether the paralysis is the consequence of pressure existing at the time that you proceed to the operation, or whether it is the result of injury which the spinal cord received at the time of the accident, although it may no longer continue to suffer pressure. Now in the case that I have mentioned to you of fracture, with displacement of a large portion of the cervical column, when we came to examine the patient there was no pressure on the spinal cord at the situation of the accident; but, on cutting open the theca vertebralis, there was observed a softened state of the cord, which rendered it pretty clear that considerable pressure had existed before. Although at the time we made the opening there was no pressure, yet paralysis and loss of sensation were permanent. Now, if you had cut down and trephined the vertebral column in that case, it would be of no service to the patient; and I am convinced that, in a great number of instances, such is the nature of the injury which produces the insensibility and want of motion;—that it is an injury received at the time of the accident—a bruise, contusion, or some injury of that kind—and not merely pressure continuing up to the time when the examination is made. Then again, I have adverted, in the description I have given you, to a case where a part of the bone was broken off from the body of the vertebra and driven across the canal, filling it up; so that removing the spinal process in that case would have been of no kind of advantage to the patient. On the one hand, then, the objection to the operation I have just mentioned, arises from the great uncertainty as to the exact situation or the exact nature of the mischief; and on the other hand, I must ob-



serve, that this operation of exposing and taking away a spinous process or two, is really a very serious and difficult one. Any person who has taken out a part of the vertebrae, even in the dead body, knows that it is no trifling task, though we do not think of performing the operation with the degree of nicety that is requisite in the living subject. It is a kind of operation where, if the vertebral canal were previously uninjured, I should think likely to bring on inflammation of the spinal cord; it would be likely to produce mischief even when there had been no injury before. For these various reasons it seems to me, that the proposal of taking out the spinous processes, in order to relieve the spinal cord from pressure, is one that ought not to be entertained. It has been done in one or two instances, but these cases present no encouragement to a repetition of the attempt.

#### *Fracture of the Sternum.*

The sternum is not very frequently broken. Although it presents a pretty broad surface, and considerable violence is frequently offered to it in the shape of blows—although it is not much covered by other parts that tend to avert these injuries—yet, in consequence in a great measure of the elasticity of the cartilages of the ribs with which it is connected, the parts altogether give way, the parieties of the chest yield, consequently the bone very frequently escapes fracture from the kind of violence that you might think capable of producing it. But the sternum is occasionally broken, and the fracture may be a very serious occurrence, or one by no means very important. A very violent injury, such as a wheel passing over the body, will produce it; but then the accident becomes serious, not so much in consequence of the injury which the sternum has received, as in consequence of the violence offered to the parts within the chest. A fracture of the sternum not attended with any of this kind of injury to the internal parts, is by no means a serious occurrence.

A young fellow, about 23 years of age, was brought to St. Bartholomew's Hospital in January 1826, and came under my care. I believe he had been engaged with some of his companions in some sports of a rough nature, and in the course of these his chest had been struck with great violence against the edge of a table. Upon examining him, when he came here, it was evident that the sternum was broken across, about the middle. There was not any displacement, but there was a little irregularity, just enough to indicate the situation of the fracture. He felt a severe pain across that part of the chest, pain which was aggravated on the motion of the parts in breathing and coughing. At the time he came to the hospital his pulse was feeble, and he seemed to be labouring under consi-

derable depression, like a person who had met with an accident of a serious kind. There was a slight motion of the fracture at the situation where it had occurred when he drew his breath in, and when he coughed, or when he made an attempt to elevate the head, a crepitus could be distinctly perceived. Soon after he came to the hospital his pulse recovered, and it was thought fit to take some blood from the arm: he lost twenty ounces with apparent benefit. He had a broad bandage buckled on the chest, similar to that used for a fracture of the ribs. In the course of the night he suffered much from coughing, which produced much pain of the chest in the situation of the fracture. For this a linctus was given, consisting of syrup of poppies and oxymel of squills, and then the case went on without any unfavourable symptoms. He came in on the 16th of January, on the 23d he was able to get up, and on the 2d of February he left the hospital. He got well more quickly than patients usually do from a fracture of the ribs.

I have seen several instances of fracture of the sternum similar to this. It is possible that one end of the fracture may be depressed, but I believe this does not ordinarily happen. The way in which the cartilages of the ribs are connected with the sternum prevents depression. If, however, the inferior fragment of the sternum should be depressed under the superior one, inasmuch as the anterior mediastinum behind it contains only loose membrane, this displacement would not, I apprehend, be important.

#### *Fracture of the Ribs.*

*Fracture of the Ribs* is much more common than that of the sternum. When this takes place on the anterior part or side of the chest, the accident is generally pretty easily recognizable by putting the hand on the part where the violence has been received, or where the patient is sensible of the pain. The movements of the chest produce a sensible crepitus, and the pain which the patient experiences pretty accurately defines the spot where the fracture has taken place. When a fracture is situated in the lower ribs, and rather far back, where the ribs are covered by the muscles of the back, we often do not succeed in detecting grating or crepitus, although all the other circumstances are present that lead us to believe that fracture of the ribs has occurred. In that case, it is best to adopt the treatment that is suitable to fracture. The function of respiration is of course much affected when fracture of the ribs has taken place; for this continued action being attended regularly with more or less of motion of the ribs, a constant source of pain arises; this, however, in some measure, can be avoided, by the diaphragm and the abdominal muscles being employed in

respiration, to the exclusion of the intercostal muscles and the motion of the ribs. If the chest could be kept perfectly at rest—if the patient did not employ the intercostal muscles at all, there would be no moving of the fractured ends of the bone against each other, and no pain experienced. We endeavour to accomplish this purpose as well as we can, by covering the part either by a broad circular bandage of calico or flannel, or by including it in a broad piece of girth, fastened by buckles and straps, which is called a *fractured rib bandage*. Patients very often experience much comfort from the application of a bandage—they find that they can move, or even cough, and breathe freely when it is on, although there is considerable pain from the grating of the broken ends when the bandage is not applied. But in other instances the application of the bandage seems to act unfavourably on the broken ends of the bone, and aggravates the sufferings of the patient, particularly when several ribs are broken; so that under those circumstances we find it necessary to leave the chest without this external pressure. These cases, then, must be regulated by the effect produced. When we see this effect produced by the application of the bandage, we must leave the patient to be guided by his own feelings, and must allow him to tighten the bandage as he pleases, and not have it applied at all if he feels his sufferings to be aggravated by it. If the patient has much cough in consequence of the accident, and if he be of a full habit, it is expedient to bleed and purge him, and to put him on low diet, and then in the course of a fortnight or three weeks he gets quite well. The fracture of a *single* rib is not by any means an important occurrence—the patient recovers easily from it; but when several ribs are broken, the case may be very serious.

There is one particular circumstance connected with the fracture of the ribs, which is very often a source of serious danger—that is, the circumstance of the broken end of the bone wounding the pleura, projecting into the cavity of the chest, and reaching the lungs. Under such circumstances air escapes from the wound of the lung into the cavity of the chest, and very often passes through the opening which the broken bone has made into the cellular membrane in the situation of the fracture. From the freedom of communication of the cellular texture all over the body, the air, when it is once admitted, readily extends over the chest; and, in fact, it may occupy the cellular membrane of the whole of the body, constituting the case termed *emphysema*, in which the cellular membrane is distended with air, as the cells of it are distended with water in the case of *anasarca* or general dropsy.

The mere distention of the external cel-

lular membrane, although it may produce great swelling, although it may swell the face, and close up the eyes, although it may distort the features so as to render the person hardly distinguishable to those that know him, and although it may swell other parts very considerably—yet this mere distention of the cellular membrane by air is not a thing of great importance.

If the swelling proceeds to any considerable extent in any part, we can get rid of it at once by making a puncture with a lancet, and letting the air escape. When the further introduction of the air is cut off, the air which is contained in the cellular membrane quickly disappears. But the great mischief arises in the case of *emphysema* from the air which enters into the cavity of the chest, more particularly if it should not meet with a ready exit in passing from that cavity into the cellular texture of the body. The cases, therefore, of *emphysema* in which there is the largest swelling, are not the most important. If air escapes from a wound of the lung into the cavity of the chest, and is there retained, in the first place, the lung that has been wounded collapses very much, is much diminished in size, and the place which it formerly occupied in the chest is now occupied by the air effused from the wound; but if the air still continues to pass through the wound of the lung into the chest, it not only fills that side of the chest but pushes the mediastinum, which is a moveable partition, to the opposite side, and prevents that lung also from becoming fully distended, so that the impediment to respiration is very much increased. Respiration is rendered imperfect from the wounded lung being collapsed, and therefore incapacitated for the necessary and usual purposes; and a still further effect is produced by the pressure of the air against the mediastinum and lung on the other side. The mediastinum, you are aware, is a moveable partition, in fact, it is so moveable, that when you lie on the right side, the heart pushes it to that side, so that you will not feel the pulsation in the usual situation. The mediastinum is capable of passing in one direction or another, according to any force that is applied to it; and hence matter, or any fluid contained in one side of the chest, will exercise a considerable pressure upon the parts contained in the opposite side through the mediastinum, and under such circumstances, respiration will become extremely embarrassed. The only course for relief that you can adopt is that which you would take if one side of the chest were similarly distended either with water or with pus, that is, you must make an external opening, and allow the air to escape, by which, at all events, temporary relief is given to the patient; and if the distention returns, you must re-open the wound, and allow the same relief again to be produced. You may

make an opening between the fifth and sixth ribs, towards the anterior part of the chest, if it be the right side that is the seat of mischief, but you open it lower down, and farther back, if it be on the left side, so as to avoid the situation of the pericardium and heart.

#### *Fracture of the Pelvis.*

Fracture of the *pelvis* can hardly take place except in consequence of some very great violence, such as a tremendous fall, which shatters the part of the body which comes to the ground; or the passage of a carriage-wheel, or something of that kind, over the lower part of the body, in which case the wound arising from the accident is very serious—is generally attended with the wound of an important vessel, or some internal organ. The mere consideration of the fracture is a matter of minor consequence; indeed, in these cases of fracture we can do very little towards relieving the very serious state in which the patient is placed. If the *os pubis* be fractured, you probably have injury to the urethra, which may require a particular mode of treatment; but we are not able to do much in these cases towards replacing and retaining the fractured parts in apposition. All that we can do in the fracture of the *pelvis*, as in the fracture of the spine, is to place the patient in an easy position; to keep him at rest, and administer to any particular symptoms that may occur in the course of the case. If the *sacrum* be fractured, you have in addition to other symptoms, those of paralysis, affecting the muscles that receive their nerves from that situation. It is possible for the superior and anterior part of the spine of the ilium to be broken off by violence of a certain kind. In such a case we can do little more than lay the patient quiet in bed, and let him remain so. It might be possible, perhaps, to employ compresses or bandages that would, in some measure, conduce towards keeping the fracture in a state of apposition.

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#### OBSERVATIONS

##### ON THE

#### ANATOMY, PHYSIOLOGY, AND DISEASES OF THE CRYSTALLINE LENS,

##### *And their Treatment.*

By RICHARD MIDDLEMORE,

Assistant-Surgeon to the Birmingham Eye Infirmary.

[Concluded from page 363.]

the *cornea* (instead of the *sclerotica*), at the same distance from its union with the *sclerotica* as in the former case. The point of the instrument should be passed obliquely forward towards the pupil, and so depressed as to puncture the capsule and lens. This is nearly all that can be done; and as the cases for which this operation is selected are, or ought to be, such as merely require the admission of the aqueous humour, or a slight disturbance of the capsule and lens, to ensure absorption, no extensive movement can be requisite.

After the operation of extraction has been performed, there are two important points to be secured—the prevention of severe inflammation, and the union of the corneal flap. To effect the first object, it is right to restrict the patient to a low diet, to exclude all light from the eye, and to keep it moistened with some cooling application. A blister at the back of the neck, and a dose of aperient medicine, is generally useful on the second day after the operation. If the lens has been larger than usual; if the section of the cornea has been small, the iris injured either by the knife or the forcible propulsion of the lens; or if the lens has been removed with difficulty, owing to the formation of some posterior adhesion; inflammation of a severe character, indicated by head-ache, pain of the eye-ball, scalding lachrymation, &c. may arise, demanding active depletion and the free exhibition of calomel and opium. We should, however, be cautious in using mercury prior to the union of the cornea; for, in some instances in which it has been liberally administered soon after the operation, no union has occurred, and in other cases, where union had commenced, the connecting medium has appeared to give way, to become absorbed, and no adhesion has subsequently taken place: nothing, therefore, but the most urgent and imperative necessity can justify the free use of calomel at an early period after the operation of extraction.

To assist the union of the divided cornea, (after having accurately approximated its cut surfaces, and restored, with the spoon-end of the curette, the circularity of the iris, if it has been lost by falling against the section, or from any other cause), we carefully close upon it the eyelids, and place upon them a fold of linen, supported by

*Operation of Keratonyxis.*—In this operation the needle is passed through



a roller loosely passed around the head. The object of this bandage is to quiet the eye, support the cornea, and keep in apposition its divided surfaces. If no great pain or uneasiness be felt, it will not be necessary to remove this bandage on the following day. In about five days it may be dispensed with altogether, for in that time union may be expected to have taken place. This point, however, must be ascertained before it is discontinued; it is not desirable to maintain pressure upon the eye longer than is absolutely required, on account of the irritation it has a tendency to produce. Should the flap display a disposition to bulge forward, soon after the bandage has been left off, it ought to be reapplied; and if this evidence of imperfect union be shewn in an old person, particular attention should be paid to the diet; every thing nourishing and supporting should be liberally administered, and the power of the constitution fostered by every possible means; for if this be not promptly attended to, the object of the operation must be inevitably frustrated, and the cornea as certainly become staphylomatous. Should a tendency to this latter condition be discovered, a solution of the nitrate of silver should be carefully applied, by the aid of a fine pencil, to the partially organized medium of the flap; or it may be applied in substance, after having been scraped to a very fine point, limiting its use, of course, to the imperfectly organized union subsisting between the cut edges of the cornea. As this condition of things most commonly occurs in old persons, from lack of constitutional vigour, it is most desirable to permit such patients to continue the diet to which they have been habituated—to allow them, in short, the same amount of support after the operation as they have been accustomed to receive before. The iris is sometimes drawn towards the incision, after an operation for extraction; an effect generally resulting from an imperfect section of the cornea, laceration or other injury of the iris during the performance of the operation, or from an unusually large lens, the circumference of which is exceedingly firm and dense. It is not owing, as has been represented, to gravity; for if it were, we should find it taking place most frequently after the lower section, and especially when the opening in the cornea has been unusually

large, which, on the contrary, as far as my observation extends, is one means of preventing it. It appears to me, that whenever the opening through which the lens has to pass is too small, the iris is subjected for a long time to forcible distention and stretching, from its unavailing efforts to escape. To this long-continued pressure I am induced to attribute that loss of tonic power which prevents the iris from regaining its circular form. I have seen cases in which the iris has been partially detached from its ciliary connexion, owing to the violent pressure of a lens, the edge of which has pushed against it, between its floating and its ciliary margin; and it has many times occurred to me to witness an iris, after having sustained this pressure for some time, instantly become prolapsed, permanently prolapsed, on the escape of the lens. Such a state of things cannot be remedied; the iris will not recover its tone or its figure; we must therefore endeavour to limit the extent of the prolapsus by a careful apposition of the cut edges of the cornea and the employment (if it increase) of the solution of the nitrate of silver; resting content, if no greater evil follows such an operation ill performed, than a distorted pupil.

It is always right, however, to remedy the mischief, if possible, at an early period, prior to the formation of adhesions: as soon, therefore, as the operation is concluded, let the iris be replaced with the grooved end of the curette, and, if it be necessary, let out a portion of the vitreous humour, so as to diminish the bulk of the contents of the globe; let the corneal flap be properly adjusted, and a quantity of belladonna cerate be placed upon the eye-brow, and repeated every six hours. If the prolapsus appear to be increased by a spasmodic action of the muscles of the globe, give the patient a dose of opium, and employ every measure calculated to allay irritability. Attention to these directions will afford the iris every chance of recovering its circularity, and place it, at all events, under the most favourable circumstances for any restorative process. If, however, our first efforts have not been successful, no second attempt must be made to remedy the evil; for here, in truth, the remedy, whatever it might be, would be worse than the disease; the iris, having become accustomed to its new figure, having acquired adhe-

sions in its novel situation, would not only sustain great injury, probably extensive laceration by any attempt to dislodge it, but would instantly resume its inactive state as soon as the instrument which supported it in its natural position was withdrawn. To the probable mischief, and certain fruitlessness of this interference, as far as regards the iris, would be added the highly-injurious effects upon the divided edges of the corneæ, effects quite irreparable in very old and feeble subjects, for staphyloma corneæ would almost certainly occur. When the uniting medium gives way, and admits of a prolapsus of the iris, which prolapsus is obviously increased by the pressure of the humours, it is advisable to puncture its most prominent part, and having evacuated the aqueous fluid, to adopt the customary plan for uniting the divided edges of the cornea, and preventing any further prolapsus.

I have alluded to iritis as an effect sometimes consequent on the operation of extraction. Now, if this delicate and important part become inflamed, and the inflammation be not checked by active antiphlogistic treatment, the employment of calomel and opium, counter-irritation, cooling lotions, the local application of belladonna, and other measures adapted to the peculiarities of the case, we may have a closed pupil; the iris may meet in the centre of the pupil, and close the opening through which light is transmitted to the back part of the eye; or an adventitious and opaque membrane may be formed in the situation of the pupil, to which the iris may become adherent. It is right to mention, that if, from the too oblique division of the cornea, or the too abundant deposition of lymph in the place of the incision, a degree of opacity should be produced, of sufficient extent to interfere with vision, a solution of the oxymuriate of mercury should be dropped into the eye every night, to obtain its absorption; or what I have found still more useful, the nitrate of silver ointment, as originally suggested, and used for the cure of purulent ophthalmia, by Mr. Guthrie.

The following includes most of the ill consequences which occasionally follow the operation of extraction: iritis, opaque deposition in the situation of the pupil, closed pupil, adhesion of the iris to the corneal section, union by

broad surfaces, super-abundant deposition around the division of the cornea; partial, or general staphyloma of the cornea, or of the sclerotica, and sloughing of the cornea. These are occasional effects; but if the operation be properly performed in an eye suited to its performance; if the cataract be not unusually large, nor have contracted any morbid adhesions to surrounding parts; if the patient be properly prepared for the operation, and judiciously managed after it, it is not expected that any such consequences will take place, because no parts very susceptible of inflammation have been wounded, no vascular, nor deep-seated texture, with the exception of the iris, has been touched, or in any way injured. But in the posterior operation of solution, we find that almost every important part has been either transfixed or otherwise injured; and, as might be expected, inflammation, in its severest form, often takes place. It is true the opening is small, and is made with a sharp instrument—an instrument forming an incised, not a contused wound; but it is still a serious and important injury when we take into consideration the delicacy, susceptibility, and vascularity of the wounded parts; and on this account is only admissible where extraction could not be performed, or where, if the incision of the cornea were made, the removal of the cataract could not be effected without considerable difficulty, or where the lens and vitreous humour are so firmly united as to be almost incapable of separation; or, lastly, where the wound, if made, would not be likely to heal. After this operation, and that to which I shall next refer, we have to contend with inflammation, to promote absorption, and to secure the patulence of the pupil. To accomplish these objects we must adopt the same general treatment as after extraction, modified, of course, by the extent and peculiarity of the inflammation. Bleed, if the pain be severe; administer mercury, if absorption proceed too slowly; and smear over the eyebrow belladonna cerate, to preserve the size and figure of the pupil, to prevent the iris from acquiring any morbid adhesions. It will not, however, be necessary to make any pressure upon the front of the eye, exclusion of light by a four-stringed bandage and a green shade being alone requisite.

If by the operation of keratonyxis we could command the needle, and move it as effectively and freely as in the posterior operation, the latter would be altogether unnecessary, on account of the greater degree of injury it produces; unfortunately, in keratonyxis the motion of the needle is confined, and that proper comminution of the lens which, in some cases, is absolutely necessary for its absorption, is prevented: this constitutes a fatal objection to its frequent application, and obliges us to have recourse to more painful and harmful operations. The operation of depression, extraction through the sclerotica, and some others, proposed for the removal of cataract, seem to me so obviously bad, that I do not deem it necessary to do more than mention them.

After any operation for the removal of the lens, it is desirable that the patient should be kept in a dark room, that the head should not be too much clothed, and that it should be well raised when lying in bed; smoking should not be allowed, nor any forcible action of the muscles of the face, as by the mastication of hard food, permitted; the patient should not approach very near to a fire, nor in any way rub, or otherwise irritate, the eyes.

The crystalline lens is sometimes converted into an osseous mass of variable volume, being sometimes as large as in a state of death, but more commonly shrivelled and diminished in size: sometimes this change is merely partial; more frequently it affects its whole texture; occasionally its surface is smooth, but more generally craggy and uneven; the capsule too is subject to this kind of alteration, and is changed into a smooth lamina of bone, preserving its original form. A short time since I assisted a gentleman in the removal of an ossified capsule, and on examination of it afterwards, we could discover no reason why it should have caused so much disturbance; it was a smooth layer of bone, having no inequality upon its surface, nor was it at all displaced; yet the sufferings of the patient prior to the operation were exceedingly severe, and disappeared immediately after its performance. This disease would appear to be the product of altered action of the vessels of the part, similar to what takes place in other situations. I have only seen it in ad-

vanced age, and in persons afflicted with gout or rheumatism: it would appear also to furnish an additional argument in favour of the vascularity of the lens.

I have said that when the crystalline humour is converted into an ossific mass, it is generally diminished in size and shrivelled in appearance, less frequently enlarged, and irregular in its figure: the vessels of the lens have secreted bone, the natural structure has been absorbed, and the diminution of size occurs as a consequence of the obliteration of vessels, before a deposit equivalent to its natural volume has taken place, or, in other words, that portion of the lens which remained when the obliteration of vessels from ossific deposition took place, has been absorbed. Now, if the lens be not organized, if it be a mere secretion from the arteries of the capsule, bony deposition, if it occurred at all, must take place upon its exterior surface, forming a covering to its natural structure; but it is unnecessary for me to say that such is not the fact, nor am I aware of any case in which such an appearance has been noticed, nor acquainted with any instance in which the healthy structure of the lens has remained, whilst ossific matter has been secreted in the place of the liquor morgagni, or in which the capsule has been converted into an osseous lamina. Is the pain which I have represented as accompanying this morbid change dependent on the pressure of the nerves, or an increased sensibility of the eye, from concomitant alteration of other parts?

Other kinds of disease affecting this part have been mentioned, founded generally on some singularity of form, colour, and consistence, circumstances which alone are insufficient grounds for such a distinction. I do not know that any malignant diseases to which the eye is subject, have their origin in the lens; on the contrary, I have noticed generally a freedom from them; for instance, I have seen the lens drop from the eye of a patient with fungus hæmatodes, nearly in a transparent state; and on one occasion, the mother of an infant brought me an opaque lens, not otherwise altered, which had fallen from its eye soon after a fungus protruded. Indeed if we consider how feeble are its vital powers—how low its organization, this circumstance can excite no sur-



prise; all malignant diseases betray a partiality for highly vascular and richly organized structures: fungus hæmatodes has its origin in the retina; cancer attacks the breasts when the mammary gland has ceased to secrete milk—the uterus, when its vessels no longer continue to pour forth the menstrual discharge, &c. &c. I do not mean to say that this is invariably the case, but it must be allowed that highly-organized parts are chiefly obnoxious to malignant disease, and *vice versa*.

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### OBSTETRIC SOCIETY.

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*To the Editor of the London Medical Gazette.*

14, New Broad-Street,  
June 1, 1830.

SIR,

I HAVE been instructed to furnish you with a short history of the Obstetric Society from its formation, and therefore send to you the inclosed.

I am, Sir,

Your obedient servant,

FRANCIS H. RAMSBOTHAM,  
Hon. Sec.

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In consequence of the numerous instances which had occurred within the knowledge of many medical practitioners, of great mischief produced by the indiscriminate practice of midwifery, some gentlemen were induced to form themselves into a society at the end of the year 1825, for the purpose of promoting obstetrical knowledge, and of protecting the public from the injuries to which they were exposed. The obstetric society originally consisted of thirty-one members, and since its establishment no others have been added: it includes the names of most of the present and former physicians and surgeons of the obstetrical institutions, as well as most of the lecturers on midwifery in this metropolis. A subscription of two guineas from each member has been found sufficient to meet all the expenses which it has up to the present time incurred.

As it was the great object of this society to act in unison with the three

medical corporate bodies, and as not one of those bodies acknowledged midwifery as a part either of physic or surgery, by examining candidates on their capability to practise this branch of the profession, the most proper and direct course for the society to pursue was thought to be that of addressing the three corporate bodies, stating to them strongly and broadly the feelings which the society entertained on the subject, and requesting to know whether they were disposed to obviate the causes of the calamities complained of. Provided, however, the constituted medical authorities did not consider themselves invested with sufficient powers—or, possessing those powers, did not feel inclined to exercise them for the public good, the society declared their intention of appealing to the legislature for the accomplishment of that object which would then appear to be attainable by no other means. They suggested at the same time that all the desired advantage might be gained, and the proposed protection of the community would be most easily secured, by each body inquiring for itself, through its own examining board, into the extent of the knowledge of midwifery possessed by each candidate who came before them. This mode of proceeding seemed to the society to offer the fewest obstacles, and be most free from objections, as it would leave the relative situations of the three chartered bodies undisturbed, whilst it would secure to the public the certainty of having qualified practitioners in midwifery as well as in the other departments of the profession.

To this letter, which was dated March 20th, 1826, the apothecaries first replied, and in their answer (bearing date April 4th), they stated that “they were well satisfied of the existence of abuses occasioned by the indiscriminate practice of midwifery, and would be happy if it were in their power to render assistance in promoting the laudable object of the society; but they were of opinion that their act did not give them any authority to superintend and regulate the practice of midwifery; they considered the subject well entitled to parliamentary interference, and stated their willingness to conduct examinations in midwifery provided parliament would commit to them the responsibility.” In the reply of the College of Physicians on June 9th, the grand question was com-

pletely evaded ; it merely consisted of a resolution to the effect that "the College was best satisfied when midwifery was practised by those who had been found on examination before them to be competent to the exercise of the profession at large by their knowledge and acquirements ; that the delivery of women was an art of manual skill, and therefore in the province of surgery ; and that the treatment of the diseases of pregnancy and the puerperal state was a part of the general practice of physic, and as such liable to the inquiry of the censor's board." And in the answer of the College of Surgeons, which was not received till July the 19th, four months after the society's address was presented, the positions laid down by the society were tacitly admitted as true by the expressions, "*that the College were not invested with sufficient power to obviate the evils stated by the society to arise from the want of legislative regulations over the practice of midwifery.*"

The society now felt that its next endeavour might with propriety be directed towards obtaining the interference and powerful aid of government in a cause which so intimately concerned the whole community, and a resolution to the effect of addressing his Majesty's secretary of state for the home department was passed in January 1827. Still, however, being willing to afford to the three corporate bodies another opportunity of co-operating with the society in the settlement of the question, the society resolved to address them once more, apprising them at the same time of their determination to apply for the assistance of government.

The replies of the chartered bodies on that occasion followed each other more speedily ; first, from the Surgeons on February 17th, 1827, who stated "that their College was instituted solely for the purpose of examining and attesting the capability of persons to practise the art and science of surgery ; consequently, being solicitous that those persons who conduct the examinations should be particularly skilled in surgery, the College had excluded from the Court of Examiners those surgeons whose time and attention had been occupied in practising the obstetric and pharmaceutical departments of medicine ; that the Council of their College did not perceive how it could compel even its own members to submit to examination in midwifery ; that no tribunal for examining and at-

testing the capabilities of persons to practise midwifery had yet been instituted ; but that the College *would willingly form a board of examination for the midwifery department of medicine* provided the government of the country deemed it necessary, and would give them the requisite authority for that purpose."

On February 22d the Apothecaries returned an answer, referring the society to their former letter ; and on February 27th the Physicians replied, who declined giving any more explicit answer.

The society then addressed a memorial to Mr. Peel, March 20th, 1827, in which the replies from the three corporate bodies were commented upon ; the great responsibility which attaches to the practitioner in midwifery demonstrated ; the necessity that exists for every medical man making himself acquainted with that branch of the profession, and the impossibility of detaching it from the general science of physic and surgery, or of studying it separately, clearly shewn. It was also brought before the notice of the secretary of state that instruction on midwifery and the diseases of women and children at that time constituted no necessary part of the courses of lectures as required for examination on medicine and surgery ; and the object of the memorial was declared to be "to oblige all persons who present themselves for examination before the three corporate bodies, to procure such information on the subject of midwifery as should give them competency to practise it ; and to induce the examiners not to neglect the inquiry into such competency in those who present themselves before them as candidates for admission into their respective bodies." It was urged that the protection sought might be best afforded by the by-laws of the corporate bodies being so altered as to ensure professional instruction and examination in this branch of medical science ; and by the repeal of those other by-laws, or the discontinuance of those customs by which men who have added practical information on midwifery to their other acquirements are excluded from the examining boards. It suggested that the same power which was given by act of parliament to the corporate bodies to prevent unqualified persons practising the other branches of medicine and surgery, should be extended also to midwifery ; and, lastly, it declared that the

members of the society could not allow themselves to be selected for the purpose of forming a *separate board* for the regulation of the practice of midwifery, as such a proceeding would imply a *partial* acquaintance with a profession which they had studied as a *whole*, and which they had practised as a *whole* in common with the other members of the bodies to which they individually belong.

At the same time a communication was made to Mr. Peel that a deputation of the society had been empowered to wait on him for the purpose of elucidating whatever might appear imperfectly explained in the memorial, and the Right Honourable Secretary appointed that those gentlemen should attend him on the fourth day after the receipt of the papers. At this interview Mr. Peel stated he had read over attentively the memorial and correspondence; he approved the intention of the society, admitted the importance of its objects, and promised to refer the memorial to the three corporate bodies, whose subsequent answers to the secretary of state were transmitted to the society in July 1827.

In their official answer the College of Physicians considered the examinations entered into at the College on diseases of women and children, a sufficient test of the candidates' knowledge on those points, and the act of delivery an operation of a surgical nature. Yet the surgeons in their reply, far from agreeing with the latter position, contended that *by admitting practitioners in midwifery* into their council they would "weaken that respect the public now entertains for, and the confidence it now has in that council;" they observed "they had hitherto elected as examiners such surgeons as they believed had, in the early period of their lives, been accustomed to pass their days in hospitals, and their nights in the study of their profession, and not in the avocations of a lying-in chamber. They, however, informed the secretary of state that they had, since the society's first application to them, passed a resolution requiring certificates of attendance on two courses of lectures on midwifery from each candidate for a surgical diploma. The society of Apothecaries, on the other hand, in their reply, "considered the object of the obstetrical society as tending highly to the benefit, welfare, and happiness of the community, and to the

usefulness of the medical profession." They "called the serious attention of the secretary of state to the subject, and expressed a hope that some legislative measure might be devised which would in future afford security to the public that practitioners in midwifery were well educated in that branch of the medical profession, and fully competent to the practice of it." But although perfectly convinced of the propriety and necessity of instituting examinations on this subject, they thought the powers they possessed did not authorise them to undertake such a duty.

The statements brought forward, and arguments used by the three corporate bodies on this occasion, demanded severally the notice of the society; and accordingly a second memorial was laid before Mr. Peel, bearing date March 21st, 1828, in which the society, after disposing of those replies, submitted to his consideration an easy and simple plan for placing the practice of midwifery on a respectable footing, viz. that the Colleges of Physicians and Surgeons should be recommended to annul their respective by-laws, by which the fellows of the former, and the members of the Court of Examiners and Council of the latter College, are precluded from the practice of midwifery, and that they should also be recommended to examine all their candidates on midwifery as well as on the other branches of medicine and surgery; whilst to the society of Apothecaries also authority should be given to institute examinations on midwifery.

In the month of January 1829, the committee of the society was informed by one of its members that he had had an interview with Mr. Peel on the subject of the society's second memorial; in which Mr. Peel entered on the different points suggested to him with the greatest kindness and most deliberate attention; he promised to refer that part of the memorial containing the society's propositions to the corporate bodies for their reconsideration; to see the leading members of the physicians and surgeons colleges on the subject; and having so done, to forward the replies from the medical bodies to the society.

After the lapse of five months, during which time no fresh communication reached the society, the chairman having written to Mr. Peel, requesting to know whether any reply had been forwarded



to him from the Colleges of Physicians or Surgeons, received from that gentleman a note inclosing a paper which had been delivered to him a few days before by the president of the College of Physicians.

In this paper the question was approached, for the first time, with something like earnestness, by the College of Physicians. The president, having briefly adverted to the history, constitution, and objects of the College, said, "they could not repeal their by-laws respecting practitioners in midwifery, but proposed, in the name of the College, that as often as any physician offered himself for examination, preparatory to his license to practise, and declared his intention of adding midwifery to the practice of physic, he should be examined before the censor's board, by some licensed physician at that time practising, or who has practised midwifery, who should be called in as an assessor for the purpose of inquiring into his qualifications in the manual branch of that art." No reply has, up to this time, been received by the society from the College of Surgeons. The Company of Apothecaries, however, in accordance with their declaration made both to the Obstetric Society and Mr. Peel, have evinced a strong desire to forward the views of the Society. The chairman of the examining board of that body called upon the secretary of the society in August last, to inquire how far the society had obtained their objects in regard to the Colleges of Physicians and Surgeons, and in what way the Apothecaries' Company could further assist the society. He said they had resolved to require certificates of attendance on two courses of lectures on midwifery and the diseases of women and children from each candidate. They were still of opinion that their act did not give them the power to examine on midwifery. They would be willing to undertake any duties of examination in midwifery that the legislature might think proper to require of them, but they were all agreed that any such extension of their act must come from the government, on the suggestion of the Obstetric Society, and was not to be considered as solicited and promoted by the Apothecaries' Company.

In consequence of this spontaneous declaration on the part of the Apothecaries' Company, the committee of the

Obstetric Society addressed Mr. Peel once more, calling his attention again to the objects and wishes of the society and to the determination of the corporate bodies; and ventured to request the secretary of state to obtain for them the opinion of the law officers of the crown, as to the power possessed by the College of Surgeons and Apothecaries' Company with regard to examinations in midwifery; in order that, if this opinion should be favourable, the two bodies just mentioned might at once act upon it; but should it prove unfavourable, the society then hoped the Right Hon. Secretary would concede to these two bodies the requisite powers for that purpose, and at the same time sanction the introduction into the House of Commons of a bill rendering it penal for any man to practise midwifery who is not a legally authorized physician, surgeon, or apothecary.

This letter called forth from Mr. Peel, in December 1829, an answer to the effect that, if the Apothecaries' Company were uncertain as to the full extent of the powers which they legally possess, and were desirous of obtaining a legal opinion on the point, he must leave it with the board to exercise their discretion in respect to taking such an opinion; he must decline making a special reference from the home department to the law officers of the crown upon the subject; neither could he undertake the introduction into the House of Commons of a bill, such as was proposed by the society.

An abstract from Mr. Peel's letter was forwarded to the Company of Apothecaries, and a reply from the secretary to the Court of Examiners was received by the society in the beginning of February of this year, enclosing the opinion of the Attorney and Solicitor-General, that the Court of Examiners of the Apothecaries' Company have no power, by the act of parliament, to examine in the art of midwifery, which is in no respect comprised in the act.

At the next meeting of the committee it was resolved, that the chairman of the society should wait upon Mr. Peel, as a deputation from the society, for the purpose of forwarding the objects in view: this resolution was complied with: the conversation was principally directed towards the offers made by the Colleges of Physicians and Surgeons, and the opinion of the Attorney and Solicitor-General, respecting the power

possessed by the Society of Apothecaries under their act, was brought forward.

The society was next called together on the 18th of last month, and it was determined, that the three corporate bodies should be again addressed. It was suggested to the College of Physicians, that the regulation they proposed should be extended to *all* candidates who present themselves for a license at the censors' board, instead of being limited to those only who at the time of their examination might declare their intention to practise midwifery. For it appeared to the society, it might happen that candidates who had no intention to practise midwifery, when they applied for a license, might be inclined, at a future period, to add that branch of practice to the practice of physic; and it seemed but just, that all physicians, who were not precluded by the established rules of the College from practising midwifery, should prove, before competent judges, their fitness for that duty.

To the College of Surgeons, the society expressed their satisfaction at the regulations they have adopted, requiring from their candidates certificates of attendance upon lectures on midwifery, and trusted that they would see the necessity of instituting examinations by their own examining board on this branch of surgical science. And to the Society of Apothecaries they offered their thanks for the attention which their former letters had received from that society, and expressed their desire to render their assistance to them in endeavouring to obtain an act of parliament authorizing the Society of Apothecaries to examine those candidates who came before them, as to their qualifications to practise midwifery. The society now wait for any other communication from the three corporate bodies.

It must be observed, that on the institution of the Obstetric Society, it was resolved, that its objects should embrace the regulation of the practice of midwifery with regard to female as well as male practitioners; but it has been thought right to direct the attention of his Majesty's government *at present* only to those persons, practising midwifery, over whom the medical bodies ought to possess some control; no mention has, therefore, been made as yet of the injuries to which the

poorer classes of the community are exposed from the mismanagement of women imperfectly educated in the duties of their profession.

The society, however, has not been unobservant of such dangers, and is most desirous that some means may hereafter be adopted to correct this grievous abuse.

It is also to be remarked, that the society was originally formed with the sole intention of ensuring the welfare of the public as far as midwifery is concerned; and that at one of their first meetings it was resolved, that when the object of regulating the practice of midwifery shall have been carried into effect, its existence shall become extinct.

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### HOUR-GLASS CONTRACTION OF THE UTERUS.

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*To the Editor of the London Medical Gazette.*

Eton, 26th May, 1830.

SIR,

IN your journal of last week, I observed a letter from Dr. Holbrook, of Cheltenham, commenting upon my case of spasmodic contraction of the uterus, in which he attempts to persuade the profession that I have been deceived in my view of the case, and that his is the correct one. I was disposed to enter fully into the subject, in the hope of convincing that gentleman, that the error was not on my side; but a communication, which I have just received from Sir John Chapman, will have far more weight than any argument I can advance in its favour, and must tend to convince the minds of all unprejudiced persons on the subject\*.

\* \* \* \*

I remain, Sir,

Your obedient servant,

WILLIAM MOSS.

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*To W. Moss, Esq.*

DEAR SIR,

HAVING just seen Dr. Holbrook's remarks on your case in the last number of the Medical Gazette, but having neither time nor inclination for contro-

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\* We have not deemed it necessary to resume the discussion about the case related by Mr. Moss, the rather as Sir J. Chapman enters upon the general question.—E. G.

versy, I think it better to transmit you a copy of the statement made a few months since at one of the meetings of the Windsor and Eton Medical Society, together with the accompanying little diagrams to illustrate the same, which you are perfectly at liberty to make what use of you please; and shall only add, if the obliteration of the os uteri is insisted on in the hour-glass contraction (as it has been called), and was admitted, it might be somewhat difficult to prove my position; but would ask, if this obliteration ever continues in any other case after the expulsion of the fœtus? and whether, upon the introduction of the finger after the child has been separated, you do not immediately and instantly feel the funis between the lips of the os uteri, which a few minutes before, whilst dilated by the body of the child, was entirely obliterated? I therefore cannot conceive why, if an hour-glass contraction ever takes place, it should deprive the os uteri, as I have already stated, of its constant and uniform disposition to contract after the body that dilates it is removed.

I would further ask, whether in all other cases requiring manual assistance, the introduction of the hand does not instantly incite the os uteri to action? Few gentlemen can have been in the practice of midwifery many years without discovering that the action of the finger only on the os uteri, after the expulsion of the child, will and does in a torpid or tired state of the uterus excite its contraction, and promote the expulsion of the placenta.

My deduction, therefore, is, that the hand cannot be introduced into the uterus, after the expulsion of the child, without discovering the os uteri; and that I have never yet met with a case, after thirty years' practice, where I first passed the os uteri, and after getting into the body of the uterus, found a second contraction.

Having given you permission to launch my little bark, I shall leave her to the storms that may assail her, and believe me, dear Sir,

Yours truly,

JOHN CHAPMAN.

Windsor, 25th May.

*On the Hour-Glass Contraction of the Uterus as a cause of retained Placenta.*

This has been a doctrine taught in the schools for many ages, and is be-

lieved both by the professors and their pupils to be as clearly demonstrable as any other fact or principle in nature, the pupils leaving the schools under constant terror and expectation of encountering this formidable difficulty; any attempt to deny or controvert this position, I am fully aware, will bring down upon me all the vengeance of the schools, with all the ridicule and contempt of their proselytes and pupils. I shall, however, only solicit a patient hearing, and a cool exercise of your reason and common sense in the investigation.

We will, therefore, commence with a case of natural labour, wherein a sudden dilatation of the os uteri has taken place, and an equally sudden expulsion of the child follows, with only one or two pains: now we all know that previous to this expulsion, the os uteri is completely dilated, and lost in one general cavity in the vagina, and you cannot any longer ascertain even its edges.

In any sudden expulsion of the fœtus, in the manner I have mentioned, it is sometimes followed by an equally sudden contraction of the uterus, and the placenta becomes closely embraced without any further pain or contraction taking place, and without the usual descent of the uterus. In common cases, when we make an examination after the expulsion of the child, we find the os uteri lying in the vagina loose, and in a state of collapse, its sides lying together with the funis in the centre: if a little gradual action is made with the finger on the sides of the os uteri, a little contraction or slight pain takes place; in from ten to twenty minutes this increases, and the placenta is brought down, particularly if assisted by pressure on the region of the uterus, or rather by squeezing it with your hand, when it is expelled to the os externum. But, in the former case, the uterus is strongly contracted; and after waiting one, two, or more hours, without pain or any effort at expulsion;—either from hæmorrhage or length of time, you pass your hand into the vagina and find you have entered a large cavity (for you have no contraction of the vagina); and when your arm is introduced nearly to the elbow, you find a thick and close contraction (which has been mistaken for the hour-glass contraction); you dilate it with difficulty, and find a very firm contraction em-



bracing the placenta. Now let us stop here, and investigate the case. In the first place, then, after passing the hand through the os externum, have we met with the os uteri and dilated that, and then got into the cavity evidently the uterus, and met with another contraction precisely like a second os uteri, dilated that, and then come into the second or upper chamber of the uterus? for there are two cavities, with a central contraction, in an hour-glass. I say

no; for your hand has passed through the os externum into a large cavity (the vagina), and your first and only difficulty is one central contraction, in which the termination of its sides may be discovered, thickened and closely contracted, but not continuous into another cavity, as it would be in the hour-glass, but you find the edges of it terminating in this cavity, and that it is nothing more than the os uteri itself. I will try to illustrate this better by a diagram.

Fig. 1.

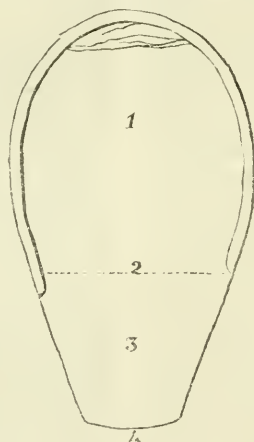


Fig. 2.

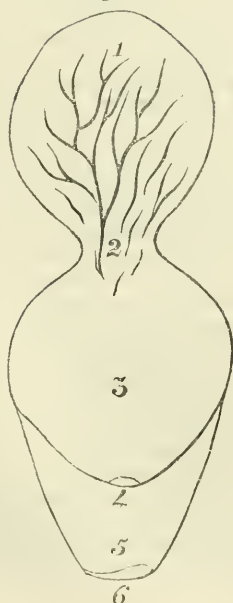


Fig. 3.



Fig. 1.—1 shews the state of the uterus previous to the expulsion of the child, with the os uteri (2) lost in the vagina, being one continuous cavity to the os externum.

Fig. 2.—1 and 3 shew the hour-glass contraction, as it has been supposed to exist, with its central contraction, 2-

4, contracted os uteri; and 5 and 6, os externum and vagina.

Fig. 3 shews the true state of the case. 1, the uterus firmly embracing the placenta in a contracted state, the os uteri also contracted, as at 2, with the vagina, 3, still in a state of dilatation.

In a retained placenta, with the uterus contracted, sometime after the expulsion of the child, the hand is passed up very high, when you meet with a contraction, as at 3, fig. 3, and pass your hand forward into a firmly contracted uterus, and not as in fig. 2. You first meet with a contraction shortly after entering the vagina, 4; and then a second contraction, 2; but, as in fig. 3, 1, 2, 3, 4, clearly explains the nature of the case and its difficulties.

My impressions for many years of the existence of this hour-glass contraction was undoubted, until, of late, I began to consider the case more attentively, and am now convinced I have never yet had a case where I have had to surmount two contractions, as in fig. 2, 2 and 4, which must have been the case if this was not hypothetical; which I am, by subsequent experience, convinced of, and that fig. 3 most clearly demonstrates the case.

I feel assured that all I can say will not be sufficiently convincing, so prejudiced and wedded are we to old and preconceived opinions. I therefore only ask that you will not coolly submit to the tradition of the schools, but patiently and quietly examine for yourselves, divested of prejudice, and then I feel assured our deductions will be the same, and that your only astonishment will hereafter be that you could for one moment have believed in its existence, and that you will find the case to be as stated in Fig. 3, No. 2, and not as in Fig. 2, No. 4 and 2, with two powerful contractions in the hour-glass shape.

To remedy this difficulty when it has taken place, get some one to fix their hand firmly and steadily over the uterus, that, when you introduce your hand, it may not be driven away from you in every direction. You then proceed by slowly dilating the os uteri, and pass your hand to the fundus, where, if the placenta is not found detached, you

may proceed cautiously in its separation; when completed, as you gradually withdraw your hand it will be expelled with it, or you keep your fingers above it, and it will precede your hand.

I have thus far confined myself to facts that, to my judgment, are clear and demonstrable; but if I was disposed to attempt any reasoning *à priori*, I should say that it would be contrary to that wise order of nature—that the uterus should be subject to an action that would be constantly at variance with its important uses; and such capricious action as has been stated might and would be liable to strangle the child, or otherwise arrest its regular expulsion: that the uterus has a longitudinal contraction that will arrest expulsion, is very clear by its action frequently on the body of the child, without its expulsive effort, can both be readily conceived and allowed; but that it should be liable to that sudden and central spasm, or contraction, cannot be so readily believed, and I trust the explanation attempted to be given will, on a closer investigation of the case, without prejudice or its shackles to old opinions, be more readily conceded. I am quite alive to an opposition from both old and young obstetricians; and I would on this, as on all other occasions, recommend and adopt a safer position of thinking for ourselves, and concede our consent only when it is consistent both with reason and experience. For I would ask, what could give the uterus the hour-glass appearance (even if I admitted the central contraction) unless some intervening body was in the lower chamber of the uterus as well as the upper? It would either be in a state of collapse or relaxation, or in a state of close contraction, quite inconsistent with that state of contraction which would exist in the upper chamber for the want of some intervening body.

## CASE OF

COMPLETE PROLAPSUS OF AN  
IMPREGNATED UTERUS.

BY WILLIAM COULSON, ESQ.

Consulting Surgeon to the London Lying-In Hospital,  
and Surgeon to the General Dispensary.

MARY ANNE REDBURN, ætat. 22, of a delicate constitution and short stature, applied to me on the 23d of April 1830, for a prolapsus of the womb. The patient stated, that she had been delivered about a year ago of a male child, and that, in a month afterwards, without any assignable cause, the womb descended beyond the external lips, in which state (with very little exception) it had continued up to the present period. At the time of the first descent, in May 1829, the uterus was of the size of an egg; it generally, though not always, returned to its natural situation at night, and descended in the morning. The menses also were regular. At Christmas she ceased to menstruate; all the symptoms of pregnancy occurred, and the uterus returned into its natural situation with much less frequency than before. In fact, for five weeks prior to the patient's coming to me, the uterus had remained, both night and day, completely prolapsed; which circumstance induced her to apply for relief. On examination, I found the whole uterus, which was as large as a cocoa-nut, and not unlike it in shape, protruding beyond the external lips; the base of the tumor being surrounded by the lesser lips, and the vagina doubled on itself. The part was very red and hot, but not tender to the touch; the os uteri, to the extent of an inch around, was ulcerated, and the uterus itself felt as if there was a foetus in it. The patient experienced a dragging sensation from the loins, and felt occasional pains across the lower part of the abdomen.

*Treatment.*—I recommended that she should keep constantly on her back, apply emollient applications—as fomentations or light poultices, and the tormentilla wash to the ulceration. In addition, to support the part with a well-adapted bandage; but *no attempt at reduction was made.* Internally, castor oil was exhibited. At the end of a month, by this plan of treatment, the

uterus had returned in a great degree; the os uteri being only visible beyond the external lips.

On Monday, May 24th, the membranes burst, and a good deal of water came away; in the evening, no part of the womb protruded; lingering pains supervened, and continued till five o'clock, A.M. of the following Thursday, when true labour pains came on; and a quarter before six she was delivered without any medical assistance, of a male child. I am informed that it was a foot presentation, and that the child exhibited signs of life for three-quarters of an hour after birth.

At half-past one of the same day (Thursday) I visited the patient, with Mr. Jackson, of Church-Street, Spital-fields, who had seen her the night before. The placenta not having come away, Mr. J., on examination, found it lying in the vagina, and removed it. The uterus was in its natural situation.

*Remarks.*—There are numerous instances on record of complete prolapsus of the womb, both in the impregnated and the unimpregnated state; but cases like the preceding, in which impregnation occurred at the time when a complete prolapsus existed, are more rare, and shew that the most striking displacement of the organ neither prevents conception and the development of the foetus, nor materially interferes with the health of the mother. The case also illustrates that, by the treatment pursued, the size of the tumor diminished as the time of labour approached. The following case, taken from vol. xliii. p. 367, of the *Journal de Medicine*, bears on the first of these points.

“Elizabeth Gautier, after being married nine years, became pregnant for the first time. From the age of fifteen she had been subject to a complete descent of the womb, with inversion of the vagina; this occurred when she was menstruating, and was attributed to catching cold during that period. At bed-time she returned the womb into its natural situation, and in the morning it always came down. During her pregnancy the whole of the womb protruded beyond the outer lips, the patient experiencing no other inconvenience than a difficulty, towards the end of her time, in making water, of which she always relieved herself by



raising the tumor." An unjustifiable operation was resorted to in this case, at the time of labour—viz. dividing the neck of the uterus; the child, which had arrived at its full time, was dead-born; the mother recovered.

Wonderful as it may appear, that impregnation and the development of the fœtus should take place in a person with a prolapsed uterus, it is almost equally surprising, that in this state the fœtus should be expelled without difficulty. This struck the attention of Harvey\*, who mentions the following case of a poor woman who did long labour under the bearing down or precipitation of her womb, to shew, that the uterus has its share in the business of delivery. After trying various means, he says, "and now at this time it [the tumor] was as large as a *bull's cod*, dangling between her legs: so that I suspected, that not onely the *sheath*, but that the *wombe* it selfe was now inverted, or else that shee was diseased with a *uterine hernia* or *rupture*. It grew at last bigger than a *man's head*, being then a hard tumour, and hanging down to her *knees* did much pain her, so that she could not goe (but upon all foure), and breaking just in the bottom of it, it did effund a moisture (as if it had been an *ulcer*) and blood with it. Looking upon it (for I did not explore it by touch) I did suspect it to be a *cancer* of the *wombe*, and therefore did bethink mysele of a *ligature*, and cutting it off: and in the interim, I advised her to apply gentle *fomentations* to it, to assuage the paine. But the following night, an *infant* perfectly shaped, of a span long, was cast out of that *tumour*, but it was dead."

Another striking point connected with this subject is, that the uterus should sometimes be completely prolapsed at the period of its greatest expansion, even during labour. Sabatier†, in an excellent paper on the Displacements of the Uterus and Vagina, says, that when we recal to mind the situation of the womb, the strength of the liga-

ments, whose office it is to keep this organ in its place, and the connexion of the vagina with the surrounding parts, it is difficult to conceive that it should be subject to so extensive a displacement as that of which we have just been speaking. But it is still more difficult to conceive how this displacement should occur during pregnancy, and even during labour. Nevertheless there are several cases of the kind recorded, and he mentions two. The complete prolapsus of the womb could scarcely, one would imagine, be mistaken for any other affection; but it has happened, says Sabatier, that women with precipitation of the womb have passed for hermaphrodites, because the tumor, which escaped from the natural part, had been mistaken for a penis. The shape of the tumor will of course vary in the impregnated and unimpregnated state, but a careful inspection of the part will be sufficient to discover the nature of the complaint.

In my case and that of Gantier before related, the symptoms were slight, and the health of the patient but little affected. In both cases, also, prior to impregnation, the menses were regular, shewing that the displacement of the organ did not interfere with its commonest function. A dragging sensation in the loins, occasional desire to make water, tenesmus, inflammation and ulceration of the most prominent part of the tumor, are the usual symptoms attending this complaint.

The treatment to be adopted in this affection is extremely simple. If the unimpregnated uterus be prolapsed, and the prolapsus has but recently occurred, the part may, in general, be reduced without difficulty or danger; if, on the other hand, the descent of the womb has been of longer duration, and there be much swelling and tumefaction of the part, it is obvious that by the recumbent posture, leeches, emollient applications, support to the part, and proper medical treatment, the inflammation must be removed before the reduction be attempted. The coexistence of pregnancy in this state renders the case more difficult: if the prolapsus occurs in the early state of impregnation, bearing in mind the observations which have just been made, we may endeavour to replace it; but if it occur in a more advanced period, or, as in my case, the surgeon has only the opportunity of

\* Exercitationes de Generatione Animalium, London, 1651. I have used the translation published in 1653, 8vo, vide p. 495.

† Sur les Deplacements de la Matrice et du Vagin, in the 3d Vol p. 368, of the *Memoires de l'Academie de Chirurgie*, &c. Also published, with little alteration, in the *Medecine Operatoire*, by the same author, Vol. III. p. 654. Edition of 1824. Vid. also some able articles on this subject in Mr. Samuel Cooper's Dictionary, and in the Dictionnaire des Sciences Medicales, t. xxiii.

seeing it till then, any attempt at reduction would be highly improper. I should advise, under such circumstances, the same plan as was adopted in Redburn's case. The treatment to be pursued in a complete prolapsus of the womb at the time of labour, is a subject which I will leave to accoucheurs to determine. I will merely observe, in conclusion, that when the prolapsus has been reduced, and the state of the parts will admit of the use of the instrument, the patient should on no account neglect to wear a pessary, to prevent a recurrence of the mischief.

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### THE LONDON UNIVERSITY.

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*To the Editor of the London Medical Gazette.*

University of London,  
June 7th, 1830.

SIR,

I HAVE read your observations on the late distribution of prizes in the university with much regret. I am sorry to think them indications of feelings towards our medical school on the part of the conductors of the Medical Gazette, which, from whatever source they may have found their way into your columns, do not, I have the gratification to believe, prevail in the profession.

Your remarks on the general state of the university are so evidently founded on incorrect data, that I do not think it necessary to confute them.

What you mean by our ceremonies wanting the dignity belonging to those universities of the "olden stamp," with which your "associations are familiar," I shall not stop to inquire. No one has a truer respect for ancient institutions than I have, but my respect does not amount to worship; and I confess that the simplicity of our ceremonies seems to me quite as interesting as are the pomp, the display, the gorgeous robes, the weighty mace, and heavier Latin, and all the monkish inanities which still encumber those venerable establishments.

You are pleased to express your dissatisfaction with the appearance made by the professors on that occasion; and say, that it suggested the question, "whether the pupils had been attracted

by the accomplishments of their teachers or by the pomp and circumstance of the situations which they held." I am sorry to learn that we appeared to so little advantage; but it is difficult to know what particular accomplishments you expected us to take that opportunity of exhibiting. Recollect, sir, that the professors had been doing their duty during a long session, then just concluded; that such accomplishments as were applicable to their important task had probably been shewn in their lecture-rooms. They had terminated their labours by an anxious investigation into the acquirements of their pupils; and the duty of the 15th of May, as far as the professors were concerned, was simply to deliver a written report, and to name the students who had distinguished themselves. The rest was left to Sir James Graham, and so well performed by him as to have drawn forth the expression of your just approbation. Any attempt at *exhibition* on our part would have laid us open to the charge of quackery, which you have much less justly applied to the conduct of the council of the university.

But these are matters of little importance, and do not require to be dwelt upon. Your objections to the encouragement held out by the university for the better education of medical students, regard the honour of the institution, and demand more consideration.

Allow me to say that you seem to me to have viewed this subject merely with reference to its possible effect on teaching, as a trade; or on particular establishments, as a monopoly.

Although I admit that many eminent persons have always been engaged in the office of teaching in the medical schools of London, it is not to be denied that the medical education obtained in the London schools, generally, is inferior to that for which opportunities are afforded in Paris, Edinburgh, Dublin, or Glasgow, and that London has never held a high rank as a school of medicine. The explanation seems to be found in the peculiar regulations of the London schools. The effect is, that the majority of the London students make a most hurried and imperfect preparation for very important duties. After a very scanty school education, they have many of them been placed as apprentices in the country with those whose harassing engagements left them little time to attend to the professional progress of the

young men entrusted to their care. They acquire, in such situations, certain habits of practice before they know any thing of medicine as a science, which are in reality disadvantageous to them. They then come to London for a few months, in two successive winters, to study anatomy, physiology, chemistry, *materia medica*, botany, surgery, and medicine; and to practise dissection, and to see the medical and surgical practice of an hospital or of a dispensary. In an attempt to crowd so many pursuits into so small a space, some are omitted, all are imperfectly cultivated, and the study of medicine, which should particularly prepare them for the duties they mean to undertake, is generally more neglected than any of the rest. Before they return to the country they are examined by the College of Surgeons and by the Company of Apothecaries, and are expected to shew a certain proficiency in particular branches of medical science; but in the preparation of these examinations they are not accustomed to pay much attention to medicine. Yet this omission is exceedingly important, for the chief business of their lives is to practise medicine, and to act as the physicians in ordinary to the families which they attend.

These are facts known and acknowledged by all; and it is also well known that those general practitioners who have attained great reputation are men who were not content with the common course of a London education, but resorted to the other schools which I have mentioned for further improvement, or prolonged the period of their studies in London. The acquirements of many of them have, in consequence, become the foundation of claims to a higher rank than is commonly accorded to them, or than those of them can support, whose education is strictly limited by the London regulations;—claims not very agreeable, perhaps, to physicians who have acquired their degrees by diligent study, but certainly much strengthened by the degradation which the physicians have long incurred by the venal traffic in medical degrees carried on in certain Universities of the “olden stamp;” the Charters of which ought long ago to have been taken from them, and burnt.

In these circumstances, sir, the Professors in the medical school of the University of London, having no other means of encouraging students, generally, better to qualify themselves for

their duties, have recommended that a testimonial of industry and acquirement, in the form of an honorary diploma, shall be given to such of the medical students in their school as, after studying *three* years, and producing proofs of their acquirements in all the branches of medical knowledge, shall present themselves for it. It is not required that these students shall have remained *with us* one hour longer than most of them now do; it is only required that they shall be industrious whilst they *do* stay with us. It is contemplated that one year of the three will be spent elsewhere, and the student is at perfect liberty to pass that year in any school, at home or abroad.

It really appeared to me, when this matter was in agitation, that the proposition was exactly what the present state of the profession—the present state of medical science—and the present aspirations of the general practitioner, required, as well as most advantageous to the public interests. Far from anticipating such objections as you have discovered, I thought we should be considered, both by the profession and the public, as having shewn a wish to do all the good which it was in our power to do, and in the least objectionable way. After a careful perusal of your remarks, I think so still.

You, however, have overlooked all these considerations. You regard the proposition as involving an assumption of dignity for the benefit of our particular school, and insinuate that we wish to interfere with the College of Surgeons. I am quite sure that our most anxious desire, next to that of being useful to the public, was to avoid interference with any constituted body whatever. Among other parts of our regulations which sufficiently evince this, it is to be remembered, that we do not offer our honours to those who wish to avoid going through the examinations of the College of Surgeons or Society of Apothecaries, but require that the student shall have actually done *more* than they require. If I did not feel assured that you had read our propositions with very little attention, I should be compelled to adopt the suspicion of a wish to misrepresent us, of which I cannot believe you to be capable.

You say that the physicians and surgeons of the Hospital schools should do the same. For the general interest of the profession, I should be very glad to



see them do the same. How the adoption of some such system of encouragement to more prolonged study, at St. Bartholomew's, at Guy's, or at St. Thomas's, or in any other celebrated school, could "degrade science," I cannot understand, and you, I think, would find it difficult to explain.

As I should feel myself disgraced by being mixed up with such designs as you seem to suspect us of, it would give me inexpressible concern to believe that the distinguished members of my profession, who are engaged in the honourable and responsible duties of teachers in London, should fall into those errors into which you have been betrayed. Whatever you may suppose, I trust they will believe, or, at least, that time will prove to them, that although those engaged in the medical school of the University are anxious, and justly anxious, for its success, and will spare no pains to ensure that success, they do not consider themselves engaged in a miserable rivalry with the other schools, much less engaged in any unworthy hostility: I lament to see your pages made instrumental in raising up such feelings.

For myself, I can truly say, that I consider it no less an honour to belong to a class of men containing so many accomplished physicians and surgeons as are numbered among the London lecturers, than I do to be associated with my learned colleagues in the University; that I look upon myself as engaged in one common cause with all medical teachers, without reference to any particular school; and as having incurred, like them, a solemn engagement to cultivate medical science with industry, and to teach it with sincerity. If the time should ever arrive when those engaged in the medical school of the University should aim at success in any other way, I, for one, should cease to wish them to attain it.

I have the honour to be, Sir,

Your very obedient servant,

J. CONOLLY,  
Professor of Medicine.

[We have given immediate insertion to Dr. Conolly's answer: on another occasion we shall probably offer some remarks in reply; meantime we refer to the piece of intelligence at page 411, of which we were ignorant at the time our article of last week was written, otherwise we would have alluded to it.]

## COLLEGE OF PHYSICIANS.

Monday, May 31.

DR. ROBERTS IN THE CHAIR.

### *On the Cure of Habitual Constipation.*

DR. F. HAWKINS read a paper "on the Cure of Habitual Constipation, or on the method of obtaining an effect gradually more powerful by the repetition of any purgative in the same dose," by Mr. Chevalier. Mr. Chevalier was led, by reasoning on the effects of sulphate of quina in certain ulcers, (namely, that of converting purulent into mucous discharge) to infer that its agency was that of a tonic rather than an astringent; that, in short, it invigorated the action of the part to which it was applied. Pursuing this idea, he supposed that if given in combination with purgatives, it might act in the same beneficial way upon the bowels in habitual constipation. The results of more than five years extensive trial has convinced him that any sufficient purgative, in conjunction with the quina, being continued for a due length of time, will produce "an undiminished and uniform effect," requiring no increase of dose; and in process of time producing a more powerful effect than at first, so that the dose of the purgative may be gradually diminished, and ultimately dispensed with altogether.

The following are the formulæ which he has found most convenient; the former for adults, the latter for infants under one year.

R Quinæ Sulphatis, gr. xxiv. Pilulæ Cambogiæ, comp. gr. xxxvi. M. fiant pilulæ equales, xii.

R Pulv. Ipecac. gr. ʒ. Hydrarg. c. Creta, gr. ii. Quinæ Sulphatis, gr. ss. Magnesiae, vel Pulv. Rhei, q. s. M. To be taken twice or three times a-day.

### *On the Effects of Piperine in Intermittent Fever.*

The above was followed by some observations "on the effects of Piperine in Intermittent Fever," by Dr. Roupell. The author began by observing that those practitioners who had only seen ague as it appears in London, might be disposed to question the necessity for seeking after new remedies for it; but they who knew how difficult it was to deal with the disease in those situations where the poison continues still to be applied—

who had seen "the failure of bark in all its forms—even quinine defeated, and arsenic inert," would be ready to avail themselves of any addition to the means of cure. Such an auxiliary, Dr. Roupell is convinced presents itself in piperine. The author then related several cases in which it had proved efficacious in doses of from one to two grains, repeated at various intervals. The objects in view in this paper were to point out the efficacy of the remedy, its superiority to quina, and its power of controuling the paroxysm when exhibited immediately before it.

Piperine, according to M. Pelletier, is a resin with some peculiar characters, being the active principle of the black pepper long used as a popular remedy in ague. Pill is the only form in which piperine can conveniently be given: the expense of the preparation, however, which considerably exceeds that of quina, at present forms a bar to its general adoption.

#### ROYAL INSTITUTION,

Friday, May 28, 1830.

B. B. CABELL, ESQ. F.S.A. VICE-PRESIDENT, IN THE CHAIR.

*Captain Manby on the means of preserving lives in cases of Shipwreck, and on a new practical mode of hauling Life-Boats through the Surf.*

THIS veteran philanthropist, whose plans have been long before the public, feeling, as he observed, the old man creeping on him apace, and being anxious still further to promulgate a plan by which nearly 500 lives have been already saved, gave this evening a description of his apparatus and the mode of using it, illustrated by models, and as far as possible by experiment. The principle consists in projecting a shot, to which a rope is attached, from a mortar, over any vessel in danger, by which a communication may be established with the land; and with such precision can the rope be cast that the Captain stated he was in the habit, when the crew were lashed among the rigging, of saving first those who appeared most feeble. The shot, which consists of a bored sphere, can be thrown 476 yards, and lives have been saved at the distance of 240. The mortar, shot, ropes, &c. are all kept in readiness on a truck at the several stations on the coast, so as to be always immediately at com-

mand when necessity requires. A point of chief importance is the mode of laying the rope so that there may be no sudden or acute turns, which almost inevitably cause it to snap, and this invariably happens if common chains be used. During the darkness of night the position of the vessel in distress is ascertained by the projection of a paper shell, containing 200 or 300 stars, and the direction marked by two upright poles. After paying a just meed of praise to Mr. Winn, a shipwright of Yarmouth, who, half a century back, conceived the idea of rendering assistance to vessels in distress by making all ships carry floating ropes, *i. e.* ropes charged with corks, which were to be cast overboard in hope one would float to land; and to Lient. Bell, who designed to establish a communication with the shore by firing from the ship, and having shewn that both those means were impracticable, he claimed for himself the invention which goes by his name, but which has in some cases been, as he thinks, unjustly contested.

He has printed directions for the most effective manner of proceeding, and has invented a series of telegraphic signs, consisting of various positions of one or both arms, by which commands may be conveyed from the shore to the ship or from the vessel to the land.

In the library were several large Chinese paintings, which would seem to indicate some advancement by that nation in the fine arts, for one or two of them were evidently caricatures of their European visitors.

We were much pleased with a very convenient application of the mode in which small insects, &c. for the microscope, have long been preserved between two plates of glass, or one of glass and one of talc, to the purposes of vegetable anatomy. The parts of plants are so minute and delicate that preparations of their intimate structures can scarcely ever be put up in the ordinary way; but vessels the most delicate may be preserved by placing them on a small strip of glass, and surrounding the dissection with a layer of white lead, so as to form a minute basin; this should have a drop or two of spirit put in, and then a layer of talc, or another of glass being super-imposed, the preparation is complete, and can be kept for any length of time for future reference.

## MEDICAL GAZETTE.

Saturday, June 12, 1830.

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“ Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso.”—CICERO.

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## THE KING.

WE have received numerous requests to afford some particulars of the King's illness. It is obvious that were we in possession of the information required, it would be indelicate and improper to enter into details. Neither, indeed, is there any thing remarkable in his Majesty's case, or different from other instances of organic disease in the chest ending in dropsy; unless, indeed, it be the manner in which the royal patient has several times rallied when the fatal result seemed to be imminent;—a circumstance chiefly to be attributed to the skill of his attendants, and the unremitting attention with which he is watched. We understand that the most powerful diuretics having failed to produce the desired effects, and the serous effusion continuing to accumulate, in spite of the artificial means adopted for its exit—the permanent difficulty of breathing has increased to a most distressing extent, and become attended with great anxiety and exhaustion. Every means, which science can suggest has, of course, been adopted to relieve the royal sufferer: among these, the most successful in procuring sleep and intervals of ease, have been opiates, and, we believe, among others, morphia; while the more violent paroxysms of impeded respiration have been in some degree mitigated by the volatile alkali, and other diffusible stimulants.

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## HIS MAJESTY'S PROFESSIONAL ATTENDANTS.

WE would not mix up our notice of the royal patient with any allusion to the infamous attacks which have been made upon his medical attendants; but the honour of our profession requires that we should not suffer them to pass unanswered.

It was asserted in the *Lancet* last week, and the statement was copied into several newspapers, that one of the physicians had signed the bulletins without seeing his Majesty, and of course without being personally acquainted with the circumstances to which he certified: in short, that “Sir Matthew Tierney, although his *name* has regularly appeared, was not consulted by, nor even did see his Majesty, for nearly twelve days.”

It is difficult to conceive a graver charge than this, or one made with more circumstantial and deliberate minuteness of detail than appears in the paper from which it is taken. Yet do we pronounce a contradiction, as strong and unequivocal as words can make it—that the accusation is a gross and malignant falsehood, which the general tenor of the article that contains it leads us to fear is intended to serve some intriguing party and personal purpose. This story comes from the same quarter, and has precisely the same claim to our belief, as that about Sir Astley Cooper, which we proved, as well by the official statement which we published last week as by the letter of the distinguished surgeon alluded to, to be “without any foundation in truth;” and with regard to the present calumny, we pledge the character of our journal for our accuracy, in asserting that it is *wholly without foundation, and as false in statement as it is scandalous in design.*

We would also willingly remove the idea which the *Lancet* has been so anxious to propagate, under the flimsy



pretence of respect for his medical skill—that some slight has on this occasion been shewn to Sir Astley Cooper. Now we would remark, that when, on the 6th of June, 1829\*, we find Sir Astley compared to “Dr. Eady, of Church Street, Soho,” who is represented as shewing professionally “an example worthy of speedy imitation to the SERJEANT-SURGEON of our King;” and when, on the 5th of June, 1830—being precisely one year after—we find the same writer speaking of the distinguished Baronet in terms of eulogy which form such a contrast to the unmeasured insolence of his former lucubrations—we say, that when we observe this extraordinary contrast, we may fairly question the sincerity of a writer whose opinions have undergone so great a revolution. Here, however, our principal object is to correct the error, because it has appeared in several respectable papers, and among others in the *Courier*:—it is not correct to say that Sir Astley Cooper has been *superseded*, for he has not recently been in attendance. In fact, Sir Astley has not been consulted by the King since he was elevated to the rank of “Serjeant-Surgeon;” at which time Mr. Brodie and Mr. Wardrop were appointed “Surgeons to the Body.” It is the specific duty of the *Serjeant-Surgeon* to attend the King when he goes to battle, and hence the military turn of the phrase—while it is the business of the Surgeons to the Body to visit him on ordinary occasions. His Majesty’s present malady is one of those which is allotted to physicians, but which happens to require the assistance of a surgeon to carry some of the necessary measures into effect:—and it is remarkable, that while Mr. Wardrop was supposed to be in attendance, the *Lancet* was perfectly satisfied with the arrangement. Had his Majesty’s

case been surgical, then, of course, more than one eminent surgeon would have been consulted, and their names would have been attached to the bulletins. Probably, under such circumstances, Sir Astley Cooper’s assistance might have been required; but his holding the office of Serjeant-Surgeon does not, by any means, make this a matter of course:—the late Sir P. Macgregor, for instance, who held the office of Serjeant-Surgeon, never was consulted by his Majesty.

#### RESIGNATION OF MR. C. BELL.

It has been generally rumoured, within the last few days, that Mr. C. Bell has resigned his professorships in the London University. We are enabled to confirm this, and to state, that his resignation was tendered six months ago. His reasons are understood to be the impossibility of realizing those prospects which he held out to the medical pupils, in his first lecture, at the opening of the University.

#### HYDROPHOBIA.

WE were inclined to hope that the alarm on the subject of hydrophobia had been very much exaggerated. We think it right, however, to state that we have instituted some inquiries upon this subject, and find that, at one of the veterinary establishments at the west end of the town, not less than sixty rabid dogs have been received during the last three months; being a number greatly exceeding what has been met with during any former season. It appears, indeed, to prevail epidemically, and not to be much, if at all, connected with the state of the weather—at least as to heat. We saw two mad dogs and a hydrophobic cat, at Mr. Youatt’s, in Nassau-Street, all at the same time, during the coldest part of last winter. The best thing which persons having dogs which they are unwilling to destroy can do, is to send them to a veterinary infirmary the moment they shew the least symptom of illness. If it prove hydrophobia, they are prevented from doing harm; and if not, they are taken care of till they recover. As to the numberless remedies which have been published within this fortnight, there is not one of them

\* See *Lancet* of that date, page 309.

good for any thing; indeed, they are calculated to do harm, by leading persons to place confidence where they will not find safety. There is no cure, and but a short period for prevention. We have known the disease come on though the part was cut out within half an hour after the receipt of the bite: the excision ought, therefore, to be *instantaneous*.

## HOSPITAL REPORTS.

### LA CHARITÉ.

*Hæmatemesis produced by the rupture of a branch of the Coronary Artery of the Stomach.—Death.*

LOUIS PETIT, æt. 29, admitted April 30. By trade a carpenter, of sanguine temperament, addicted from childhood to intemperance and excessive use of spirituous liquors. Was seized five years ago by vomitings of blood, which continued for eight days, returning during that time every night at the same hour. The remedies he took, including astringent drinks, stopped it at this time, but the patient was so much exhausted with the loss of blood that he was confined to his bed for two months.

On his recovery, notwithstanding the warnings of his medical attendants, he drank as much brandy as ever, without, however, materially affecting his health.

April 13, 1830.—He began to feel heat and pain in the epigastric region; he almost entirely lost his appetite; and in the evening of the 30th, on returning from his work, a general feeling of illness obliged him to take to his bed, and immediately afterwards he vomited a quantity of blood, estimated at five or six pounds: he was immediately taken to the hospital. No blood was abstracted from the veins, his pulse being small and easily compressed, and he appeared quite exhausted. Mustard poultices were applied to the feet.

May 1st.—During the night the patient vomited, but not abundantly; the pulse has risen, and he is recovering strength. Hirudines xx. to the epigastric region, low diet, and an emulsion of gum and syrup of quinces.

8.—Yesterday evening the patient had a return of the hæmatemesis, and vomited a considerable quantity of blood. His general state is not altered; bowels confined. Twenty leeches to the anus. Continue emulsion.

At five o'clock in the afternoon, a return of the hæmorrhage, more violent than the preceding, brought on great prostration of strength, and at ten he died.

*Post-mortem.*—The excessive paleness of the stomach and small intestines contrasted strongly with the redness of the large. The stomach contained a sanguineous liquid, in which a few clots of blood were floating. About three inches from the cardiac orifice an ulceration was found of nearly three lines in depth and six or seven in diameter; its edges were thickened, and had a scirrhous feel, formed by the condensed cellular tissue and muscular membrane; in the centre was a conical prominence, at the top of which was a clot of blood, half an inch in length when drawn out. A probe carried into the cavity of the coronary artery, on the external surface of the stomach, was carried into the centre of the prominence, and pushed out the fibrinous plug which closed the opening. The probe, while carried along the under surface of the ulcer, entered a second canal diametrically opposite to the first; it was, in fact, the same artery nearly divided by the ulcerative process, but still connected by a filament of the arterial coat. The rest of the mucous membrane of the stomach was unaltered either in texture or colour.

It is remarkable in this case that the whole ill effects of his indulgence in spirituous liquors should be confined to a single spot of the mucous membrane of the stomach, while his general health did not appear in any degree injured. It is also extremely difficult to account for the manner in which the hæmorrhage stopped after eight days, since it appears that a rupture of the artery then, as later, must have been the cause of it. Ordinarily, however, in these cases a return of hæmorrhage takes place at short intervals, whereas here for five years he was entirely free from all symptoms of it. Could the astringents have in any way effected the plugging of the torn artery by a clot of fibrinous coagulum? It is rather a peculiar case, and seems well worth recording.

*Case of a Rib affected with Caries being Dissected out.—Death of the Patient.*

Louis Evrard, æt. 38, admitted March 23, 1830, with a small fistulous ulcer

above the fifth rib of the right side, from which had been discharged for some time purulent matter in abundance.

A probe, passed under the skin in the sinus, seemed directed to the fifth rib, near its centre, and which appeared rough and denuded, but it seemed difficult to determine whether the disease was necrosis, or caries of the bone, the history of the patient giving but little assistance.

The patient was thin, emaciated, suffering from severe cough, attended with thick mucous but not purulent expectoration; on the contrary, the matter discharged from the fistula was decidedly purulent; consequently they were very distinct from each other, and hence all idea of connexion between the surface of the bronchi and the lining of the ribs was dismissed.

On the 24th of April, M. Roux proceeded to dissect the rib out, after having taken every means to convince himself that the disease had only attacked that bone in the centre, and that those of the other side were free. The operation was performed in the following manner:—

The whole of the soft parts, covering as much of the bone as was affected, was surrounded by two semi-elliptic incisions, passing immediately under the right nipple, and extending to the sternum. The chain-saw was then passed by means of Deschamp's seton needle to the two extremities of the diseased bone, and about four inches were taken out. The part, however, next the sternum not appearing sound, a still farther portion was taken off with a circular saw. The pleura costalis was naturally adherent to the inferior border of the rib, but at the superior it had been separated and pushed in by an accumulation of putrid pus. M. Roux convinced himself that this did not communicate with the interior of the chest, and he could discover no further mark of disease. It was then dressed simply, and during the next two or three days the wound looked well, and the patient's cough was less painful, though quite as frequent.

On examining the bone, it was found to be in a state of true caries; the superior and internal surface especially were rough, and entirely denuded, and becoming gradually less diseased as it approached the extremities.

After the second day oppressions and

pains in the side became more serious, and the patient rapidly sunk with symptoms of pleurisy of the right side.

*Post-mortem.*—The right cavity of the chest contained a considerable quantity of sero-purulent fluid and some albuminous flakes, all apparently of recent formation: the two inferior thirds of this cavity were filled with the fluid, but above it required some force to separate the lungs, on account of old adhesions, and the tearing that resulted shewed the lung all studded with tubercles in an advanced stage, and the internal surface of the fourth, third, and second ribs disorganized by caries; and the points where this disease was most advanced, were those which corresponded with the tuberculous masses. The caries extended to the posterior part of the ribs, which broke with great ease; it was worthy of remark, however, that the portion of pleura from whence the rib was taken, appeared perfectly healthy, and had formed no adhesion with the membrane lining the lung. The tubercles had not suppurated in any part. There was nothing remarkable in the other organs.

## NOTTINGHAM HOSPITAL.

### *Case of large Tumor in the Thigh containing Hydatids.*

ALICE LEE, æt. 14, admitted March 24th, 1850, under Mr. Attenburrow, for a tumor occupying a considerable portion of the right thigh, on the upper part, and principally on the inside.

She states, that about eleven months since, in consequence of an alarm being given that the house was falling while she was at work in an upper room, she hurried down, and in her endeavour to escape fell down a flight of stairs, and was taken up nearly insensible. She did not then complain of any local injury, but next day, on sitting down, experienced pain in the calf of the right leg, and a sensation as of something tearing. Much attention, however, was not paid to it, either by herself or friends. About a month afterwards she discovered a swelling on the middle and inner part of the thigh, near the edge of the sartorius. It is described to have been the size of a large orange, but flattened. Advice was then procured, and leeches, lotions, and liniments applied; and at a later period tight bandaging was tried without any beneficial effect, the tumour rapidly increasing in size.

The tumour is now enormous, extending from the pubes and right inguen downwards



for two-thirds of the thigh, and spreading across the limb. She is free from pain, and none is caused by pressure. No œdema of the leg or foot; pulsation in the ham not very distinct; general health good; catamenia regular; she is very active. The circumference of the affected limb is twenty-eight inches, that of the other sixteen. Length of the tumour, from the pubes downwards, twelve inches; breadth, from base to base, nineteen; circumference, taken at its base, thirty-three. It has a tense and elastic feel, and communicates a sensation of fluid, though no fluctuation can be distinctly ascertained. The sensation to the touch is similar to that of fungus hæmatodes, except that there is an evenness of surface not generally accompanying that disease. The superficial veins are not enlarged; the integuments have a mottled appearance; no pulsation was ever observed.

A consultation was held on the day of her admission, in which Mr. Attenburrow expressed his opinion that the tumour consisted of a deep-seated cyst with fluid, probably containing hydatids; in which he was joined by Mr. Oldknow, and it was decided that an opening should be made into it.

March 26th.—A large trochar was pushed into the body of the tumour, towards its inferior edge, where the integuments appeared thinnest; and on withdrawing the blade a quantity of dark coloured matter poured out of the canula: the stream was occasionally obstructed by large portions of broken down hydatids. On gathering up the integuments with both hands, with a view to prevent the admission of air as the cyst was emptied, and to evacuate it as much as possible, strong pressure was made, and several times the bursting of a hydatid was sensibly felt, and invariably followed by a discharge of clear serum, which was again succeeded by hydatid cysts and purulent fluid. When the cyst seemed fairly emptied, a bandage was lightly applied from above downwards, and below upwards; and over the opening a plaister bandage, so as to surround the limb, and make regular and firm pressure over the whole circumference of the tumour.

The quantity of fluid discharged was seven pints. The patient was sent to bed without having experienced the least faintness.

On being visited the next morning, she said she felt quite well. The pressure of the bandage on the upper part of the limb caused a little uneasiness, which was relieved by a few rounds being cut through.

27th.—Passed a good night; does not complain of any uneasiness.

29th.—On removing the bandage to-day there was no appearance of discharge nor any fluctuation. The whole of the thigh, from the knee upwards, ordered to be strapped with plaister bandage, firmly and regularly, and covered with a roller.

\* April 1st.—Appears quite well. On examining the limb, no irregularity or local indication was observable, and the thigh appeared in its natural state, with the exception of a fullness, as though the loose sac still remained. Bandage to be re applied.

9th.—Bowels have been confined, and required several doses of medicine before they acted. The fullness alluded to is now rather more perceptible; it may be pushed up or down, and appears to contain some fluid.

13th.—She walks about, and there is no perceptible increase of swelling.

19th.—She has been up, and using exercise. There is now evident accumulation of fluid in the sac, at the upper part of the thigh.

24th.—About a pint and a half of purulent fluid was discharged by a free opening made to-day, which was then closed as before.

25th.—Complains of some pain in the limb, and is rather feverish. Sumatur haustus purgans. Pulse quick; feels thirsty.

26th.—Quickness of pulse, thirst, and general symptoms of fever still continue.

Cap. Mist. Alkal. cum Pulv. Acid.  
Tart. ter die.

28th.—Quite free from fever; limb easy.

May 4th.—Limb quite easy; no apparent increase of size.

24th.—The limb continues its natural size; the bandaging is still continued, and she enjoys good health.

There are several peculiar circumstances in the history of this case, making it one of considerable interest. In the first place, from the slight attention either the patient or friends had paid to it in its early stage, no accurate information could be obtained as to its mode of development. Then again, the tense and elastic feel which accompanied it, without any fluctuation being appreciable, made it doubtful whether it might not be of a fungous character. Mr. Attenburrow, however, after the first careful examination which he gave it, expressed the opinion we have already stated as to its nature; the truth of which was singularly well borne out, in every particular, by the result.

## NORFOLK AND NORWICH HOSPITAL.

### *Fractured Neck of the Scapula.*

JOHN HARRISON, æt. 85, an active old man, was admitted on the 13th September, 1828, into this hospital, under the care of Mr. Cross. On examining the seat of injury there was much the appearance of a dislocation of the left shoulder; viz. loss of its roundness from sinking of the deltoid muscle,

and the head of the humerus felt in the axilla. He stated that he met with the accident from a fall in the street a fortnight before. As far as could be ascertained, the blow was received upon the shoulder, and the arm was not extended at the time, as it usually is when a dislocation has taken place. He had gone about without much pain, and had sought no advice respecting his case till a day or two ago, which he was induced to do at that time, because the arm and hand had become much swollen and oedematous. By raising the shoulder, the bone was moved into its place, but it sunk again as soon as the support was removed. This explained the nature of the case, and in corroboration of its being a fracture, a crepitus was felt by placing the hand on the shoulder and raising the arm. The coracoid process also fell, and became imperceptible to the finger, when the shoulder was allowed to sink. A roller having been applied to the forearm and arm, the fractured bone was reduced by raising the humerus, whilst parallel to the chest, and drawing its head outwards. It was maintained in this position by a conical pad, the base of which was placed in the axilla, and fixed in that situation by tapes crossing on the shoulder, and tied on the opposite side. A roller round the body and arm kept the elbow applied to the chest, so as to throw the head of the humerus outwards.

Oct. 30th.—The bandages have been renewed every week or ten days, and the patient has been walking about well during the whole time.

Nov. 6th.—The limb has been supported with the sub-axillary pad and bandages up to this time, and on removing them to-day, the shoulder is found to have a good rounded shape, and is firm, as if union had taken place, but the apparatus is to be applied for another week.

14th.—The pad and bandages were removed to-day, and the shoulder is perfectly rounded and well-shaped. The limb bears to be moved freely; and as there is no doubt of firm union having taken place, the man is discharged. Two months afterwards, Mr. Cross stated that he saw him enjoying full and free motion of the injured shoulder.

Two days previously to admission, the patient applied to a surgeon for relief, who, after a slight examination, sent him to the hospital under an idea that he had met with a dislocation of the humerus into the axilla. The similarity, in appearance, which the two accidents usually present, readily leads to the occurrence of such a mistake, which, however, may easily be obviated by a strict and minute examination, and by attending to the circumstances pointed out in the relation of this case, viz. the ease with which the parts are brought to their proper position; the return-

ing of the deformity as soon as the limb is left unsupported; and the falling of the coracoid process along with the limb, so as not to be felt in its usual situation.

## GUY'S HOSPITAL.

### *Case of Fungoid Disease of Sacrum, &c.*

W. PAGE, 19 years of age, admitted 25th March 1830. About two years ago became out of health, and perceived a lump over the sacrum, which was painful; the pain occasionally shooting down the course of the sciatic nerve to the toes. The tumor gradually increased with the same symptoms till a fortnight ago, when the pain in his legs became so severe as to render him unable to use them.

He now lies on his side, or on his belly, with the knees drawn up. There is an irregular swelling on the sacrum, its right end as large as a small orange, its left diffused over the ischiatic notch and less elevated, and the two connected by a flatter band across the spines of the sacrum, which cannot, in consequence, be felt. The whole has the peculiar elastic feel of fungus hæmatodes, and is slightly painful on pressure; otherwise there is only occasional shooting pain there.

The finger *in recto* detected a lump like a goose's egg in the hollow of the sacrum, though the patient says he has never had much difficulty in passing his motions, his bowels only requiring occasional laxatives, and there being no pain in going to stool. He is obliged to strain some time before he can make water; and frequently it is otherwise, the urine passing away spontaneously in bed. There is a hard swelling behind the pubes connected with the bladder; this goes down when the bladder has been emptied, but is obviously something more than an ordinary distended bladder. The pain in his legs is like cramp, with occasional exacerbations.

Tongue clean; pulse 104, natural force; bowels confined.

Habeat Ol. Ricini, ʒss. p. r. n.

30th.—The bowels act easily after the castor oil. The pain in the left leg and thigh is most severe; it is increased on the least motion, and hence he keeps the knee drawn up to his body; he can get no sleep in consequence.

Tr. Opii, ℥xx. p. r. n. horâ somni.  
Applicatur Tr. Iodini tumori.

1st April.—Caught cold last night, and now, in addition to his former sufferings, he has a severe inflammation of the tonsils.

[This was treated on ordinary principles, and soon gave way to leeches and astringent gargles, &c. The pain in his leg also dimi-

nished, so as to enable him to sleep comfortably without the laudanum.]

12th.—Complains to-day of severe pain down the inner side of right thigh, as far as the knee.

Habeat Tr. Iodini, ℥viii. ex Infus.  
Rosæ c. bis die.

19th.—Tumor is much increased in size, and the pain down both thighs is very severe. In the right it is confined to the inner side of thigh down to the knee, and depends probably on pressure of the obturator nerve by the tumor within the pelvis. On the left side it passes down the back of the thigh, and is severely felt at the extremity of the toes. This evidently arises from the pressure of the tumor on the sciatic nerve.

Bowels not open without aperients. Castor oil makes him sick. To have instead—

Pil. Aloes. c. Myrrhā, gr. xv. pro re nata, et continuet alia.

24th.—Right leg slightly œdematous; is much weaker. To have a pint of ale daily.

3d May.—Pain intermitted for two or three days, but is now as bad as ever. Tumor larger and softer. Health keeps up, but he gets weaker every day.

To have ʒij. of wine in addition to the ale, and a chop.

5th.—Last night in making water he felt something “give way” within, and there followed a good deal of thick bloody matter, which was thrown away by nurse before any one else saw it.

8th.—There has been no more of the discharge. Since it took place he has entirely lost the pains down his thighs, and can now make water comfortably, without pain, and when he likes; bowels open four or five times a-day; tongue rather coated, not dry; pulse 96, quick; face pallid and anxious; skin dry; abdomen remarkably hot; shrinks from pressure in *epigastrio*, where, he says, is his only pain; he takes wine and nourishment—arrow-root, &c. with good appetite.

Ordered—Fotus Abdomini, et Tr. Acetatis Morphiæ, ℥xxv. o. n.

13th.—Pain in belly remains, but is not increased on continued pressure. Has had ʒij. of brandy for the last few days in addition to the ale and wine, but has no appetite for solid aliment. The tumors behind are at least four times as large as at the time of admission, and the pain in the thighs has returned. He is much worn down by suffering, and is daily getting more low.

17th.—He died early this morning.

Examination, 8 hours afterwards.—Chest: There were a few small tubercles in both lungs, chiefly superficial, otherwise the lung was sound; heart healthy. Abdomen: Peritoneum and viscera generally quite natural. The pelvis was occupied by a considerable number of tumors, growing apparently from the sacrum and os coccygis, and spread-

ing in different directions; a vertical section, however, of these two bones shewed that the bones themselves were free from the disease, (except a little of the upper part of the coccyx,) which appeared to originate in the ligaments connecting them. Behind, also, the tumors had arisen from the ligaments of the sacrum and coccygis, and had spread laterally, making pressure on the ischiatic notches.

A section of the tumors shewed them to be made up of a number of nodules, which, with the subordinate tissue, was supposed by Dr. Hodgkin to consist of cysts. There was no bony matter in them; they were remarkably soft and cerebriform, intermixed with streaks of white and patches of yellow, together with clotted and extravasated blood.

One of the tumors within the pelvis, arising from the os coccygis, had pressed forwards on the rectum, just above the anus, so as considerably to obstruct the calibre of the gut.

## NEW TREATMENT FOR ENLARGED TONSILS.

WE observe, in the French journals, the administration of calomel advocated as acting with almost more than a specific charm, in the treatment of inflammatory enlargement of the tonsils. Four cases that are given in the *Journal Hebdomadaire* are certainly sufficiently conclusive, having effected a total cure alike of the inflammatory action and the enlargement in less than thirty hours, and considerable relief within the first five! This seems very much to partake of the marvellous; however they are clearly related by M. Scille Mondezert, and as he only recommends grain doses six times a-day, no inconvenience or danger can accrue from the trial.

## BOOKS RECEIVED FOR REVIEW.

A short Treatise on Operative Surgery; describing the principal Operations as they are practised in England and France. By Charles Averill, Surgeon to the Cheltenham Casualty Hospital, &c. &c.

A Popular Description of the Aldinian Defensive Dresses, &c. &c. for rescuing Human Life and Property from Injury or Destruction in Cases of Fire.

Flora Medica, No. 31; containing Botanical Descriptions, Natural History, Chemical Properties and Analysis, Medical Properties and Uses, &c. &c. &c.

## ERRATUM.

In our leading article last week, p. 381, for “extremity of weakness,” read “extreme of weakness.”

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LECTURES ON SURGERY,

*Delivered at St. Bartholomew's Hospital,*

BY WILLIAM LAWRENCE, F.R.S.

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LECTURE L.

*Recapitulation.—Fracture of the Clavicle—of the Scapula—of the Humerus—of the Fore-arm—of the Carpus, Metacarpus, and Fingers.*

IN the last lecture, gentlemen, I mentioned to you the necessity of observing absolute quietude in cases of fracture of the spine, in order to favour the consolidation of the bones, and to diminish the effects of the inflammation of the surrounding parts, and the disturbance that might arise from that cause. But where the vertebral column is injured high up in the neck, the necessity of absolute quietude is still more obvious, because a slight degree of motion, under such circumstances, will sometimes be attended with a sudden and fatal pressure upon the spinal cord. The fractured portions in the neck are much more loose and moveable than in the case of fracture occurring either in the back or in the loins; and thus it will happen that if the head of the patient be incautiously raised, or if the patient be moved from the recumbent to the sitting position, the upper fragment may slip forwards upon the lower, and produce pressure upon the medulla spinalis.

Within the last two or three weeks I had a patient under my care in the hospital in whom this accident took place. The exact situation of the fracture was not apparent, but it was clear that it was high up. Some friends of the patient came to see him one evening, and he was very desirous of being moved a little—from the irksomeness of remaining in one position; and having expressed this wish to his friends, they raised up his head and brought it forward; the consequence was, that he died instantly. I suppose the case would have been equally fatal

if this had not happened; but of course it is well to avoid an occurrence of this kind.

*Fracture of the Clavicle.*

When you consider the form, position, connexion, and the office of the clavicle, you will not be surprised at finding that it is very frequently fractured. The clavicle is rather a slender and elongated bone. It is seated at the upper and anterior part of the chest, where it is covered simply by the integuments, so that in fact its outline is distinctly visible through the skin. It is placed between the sternum and the scapula, to both of which it is articulated, and it serves to keep the scapula, and through it the whole of the upper extremity, at a proper distance from the sternum. But for this bone, the scapula and the upper extremity would come forwards towards the anterior part of the chest; and the situation of the scapula, if it were not for the clavicle, would correspond to that which it holds in animals in whom the anterior part of the trunk is supported upon the fore legs. The clavicle is a kind of pivot, on which the upper extremity turns. From this circumstance the clavicle is liable to be fractured by direct violence, that is, by blows inflicted immediately upon the bone itself. It is also liable to be broken in consequence of violence communicated to it through the medium of the upper extremity. Thus, when a person falls to the ground and stretches out his arm to save himself, if he fall either upon the shoulder, the bend of the elbow, or on the palm of the hand—in either of these cases the clavicle is included between two forces, and frequently gives way at the weakest part, which is generally towards the middle.

Generally speaking, the fracture of the clavicle is *single*, that is, the bone breaks at one part only; but in the case of a direct blow, the fracture may be comminuted, that is, the clavicle may be broken in more places than one. Under such circumstances there may be much bruising and ecchymosis of the surrounding parts. By such direct

blow the comminuted parts of the clavicle may be depressed upon the axillary plexus of vessels and nerves, and may produce symptoms referable to pressure on those parts. Fracture of the clavicle may be either single or compound,—the latter, however, very rarely occurs. I lately had a case under my care in the hospital of compound fracture of the clavicle, where the opening in the integument was small, seated at some distance from the fracture. When the bone was reduced the wound in the integument closed very easily, and then the case proceeded as a simple fracture of the clavicle.

When the clavicle is broken, it depends upon the situation of the injury whether you will have any considerable displacement or not. If the fracture take place at the scapular end, that is, about an inch or an inch and a half from the articulation which joins the bone to the scapula, you will have no displacement, because the under surface of the clavicle is there closely connected to the root of the coracoid process by a ligament. Likewise, if the bone is broken through the thick part very near the sternum, in general the fragment is not displaced. But these are the least frequent situations of fracture of the clavicle; it more commonly gives way in consequence of the application of force from the two extremities which tends towards the middle, and then a greater or less, and in some instances a pretty considerable displacement of the fractured ends takes place. When the clavicle is broken, the shoulder being no longer retained in its proper lateral situation, it advances towards the sternum; the shoulder moves inwards towards the middle of the body, and thus carries the scapular end of the fragment under the sternal end. The shoulder also sinks, for the clavicle forms a support to the upper extremity; so that when this is broken through, the weight of the limb occasions the upper end of the clavicle to be displaced downwards: the shoulder sinks and becomes lower than before; in other words, the scapular end of the clavicle is displaced downwards as well as inwards. The principal displacement is inwards, towards the sternum, and it necessarily occasions a riding of the bones.

When the bone is reduced, which it easily admits of, there is a manifest grating or crepitus felt. The deformity that is produced by the accident, and by the displacement of the fragments which I have just mentioned to you, is visible externally. In consequence of the clavicle on the anterior and upper part being covered merely by the integuments, the inequality is visible externally; and, in fact, if the clavicle unites with the two fragments displaced, in the way I have mentioned, this kind of displacement of the ends is more or less visible afterwards, a circumstance which of course it is very desirable to avoid, especially in females, in whom that

part of the person is usually exposed. The motions of the upper extremity, that is, those motions which the upper extremity performs altogether upon the trunk of the body, are attended with pain and limited in degree, more particularly in the movement upwards. A person who has the clavicle broken cannot, without considerable pain and inconvenience, raise the arm so as to put it on the head. The under motions—those performed with the arm hanging down, may take place without much inconvenience. In consequence of the sinking of the shoulder, the patient generally turns the head and neck to that side, and will be inclined to support the elbow with his other hand, in order to ease the pain: that is the kind of attitude he will place himself in.

It is very easy to reduce or replace a broken clavicle, but it is by no means so easy to retain the fractured ends in exact apposition, so as to produce a union in which there will be no subsequent deformity. If you lift up the elbow and carry the shoulder a little backwards—if you place your hand in the axilla and draw the shoulder outwards over the hand as a fulcrum—you can bring the broken clavicle into its proper situation. Now if you can keep the upper extremity in such a situation, you of course maintain the fragments in exact apposition; but this is the difficulty,—you cannot apply the means of retention immediately to the broken bone;—you can only act upon the clavicle through the shoulder, and the means that are calculated to carry the shoulder backwards, to move it outwards, and to elevate it in its position, although they at first do not occasion much inconvenience, yet retaining the parts in this position, soon becomes so exceedingly troublesome to the patient that he cannot bear it, for many of the apparatuses that have been used for that purpose rub and gall the parts. Several of the modes of bandaging that have been invented act pretty well while the patient is in an erect posture, but when he comes to lie down in bed, the shoulder being pushed forward, the bearings of these are so altered that they no longer produce their effect, especially if the patient lie on the side on which the accident has occurred.

The modes of retaining a fractured clavicle in its situation that have been generally practised, act by drawing back the shoulder; the figure of eight bandage is one that has been most commonly resorted to. This consists in applying a bandage round the two shoulders alternately, and crossing it over the back, so that it turns round the shoulder, and the crossing of the bandage on the back represents pretty accurately the figure of 8. In that way both shoulders are drawn backwards. There is a kind of bandage, which has been invented by a French surgeon, named Brasdor, which is very simi-

lar to the figure of eight bandage. It consists of a square piece of leather adapted to the back, with straps which go round the two shoulders, and are connected to the four corners of this piece of leather. Now this piece of leather is split in two at the middle, and laces, so that when you lace it tightly you can apply force to the two shoulders in the same direction as in a figure of eight bandage. Now both these modes are attended with considerable pressure upon the anterior part of the shoulder and axilla; the skin is rubbed, fretted, and excoriated, so that great inconvenience is frequently experienced from that circumstance. Moreover, inasmuch as both these modes of treatment draw the shoulder not only backwards, but inwards, they rather tend to perpetuate the displacement, by throwing the scapular end of the fractured clavicle under the sternal end. Now you want some force that can draw the shoulder connected with the broken clavicle outwards, but not inwards. Desault, observing the effects of this ordinary mode of dressing, stated, what is very correct, that the principal indication in the treatment of a broken clavicle is to draw the scapular end of the broken bone outwards, to remedy the disposition which exists in the shoulder to fall in towards the sternum; and he observed that the most eligible mode of accomplishing this was to employ the humerus as a lever, placing a cushion in the axilla as a fulcrum. The cushion is thick at the upper part (perhaps three or four inches), gradually tapering off and becoming thinner along the course of the arm. When the cushion is thus placed, you bring the arm to the side, and you thus throw out the upper end of the humerus, and consequently the scapular end of the clavicle. Desault connected with this part of the apparatus a very complicated bandage for supporting the elbow—a bandage so complicated that it soon became exploded. But the expedient he pointed out, of placing a cushion in the axilla and carrying the arm over it, so as to form a fulcrum, is undoubtedly correct, and constitutes one of the most important points in the treatment of this accident. In order to get rid of the complicated bandage employed by Desault, Boyer employed a cushion in the axilla, and confined the arm to the body with something like a rib bandage. He had a small portion of web encircling the arm at the lower part, and by means of four straps and buckles he fixed it to the body, so as to keep the elbow close to the side; and then he supported the arm with a sling. I believe the best plan that we can adopt will consist in placing a cushion in the axilla, in the way that I have mentioned to you, and in confining the arm to the side by means of a long bandage, encircling the trunk and arm generally, and in supporting the elbow and the rest of the up-

per extremity by means of a sling carried over the opposite shoulder. By having the sling of a requisite length, you maintain the shoulder at a proper elevation, and you remedy the sinking of the shoulder, which is the consequence of the accident.

There is a very great multiplicity of bandages and apparatuses for a fractured clavicle; and I infer, from the great number of such contrivances, that not any one of them is recognized as answering the purpose effectually.

I must observe to you, that the difficulty of maintaining the two ends of the slender bone in exact apposition is so considerable, that I do not know that any one of the proceedings hitherto recommended can be confided in for accomplishing the purpose very securely. It will usually happen that more or less of deformity will follow a fracture of the clavicle; but there is this consolation in the case—the deformity does not at all injure the subsequent motions of the part. We may see instances, indeed, in which the fractured ends are much displaced—in which the sternal extremity rides considerably over the scapular: and yet the motions of the limb are quite perfect. I have seen a case where the fractured clavicle has been united really about as well without the application of a bandage at all as we ordinarily see it to be where bandages have been applied. I remember an instance of a gentleman calling to consult me, saying that he had met, about a fortnight or three weeks before, with an accident—that he had fallen, and had suffered some inconvenience, in consequence, about the shoulder; but that he should not have called upon me, only he mentioned the circumstance to some friends, and they stated that he ought to see a surgeon, and ascertain “if all was right.” I asked him if he moved the limb freely; to which he replied that he did. I requested him to put his hand to his head; he did so, but not so well as a person ordinarily does. I therefore requested him to undo his dress, and let me see his shoulder. I found a fracture of the clavicle, about the middle; the ends overlapped, but not much, and considerable progress was made towards the consolidation of the fracture. The imperfection of the movement of the upper extremity in this case, at the time I have mentioned, was but slight; and as it had gone on up to that time without any kind of apparatus or bandaging, I did not recommend the application of such, and merely directed him to keep the limb quiet. He got quite well, and at present the movement is as free as that of any person in whom no such accident ever took place. Not long ago, there was a patient in the hospital in whom a fracture had existed about ten days. No apparatus had been employed, and the consolidation was



going on very well, without more displacement than we usually see in cases that are treated chirurgically.

#### *Fractures of the Scapula.*

The *scapula* is so much covered by muscles, and its connexion with the trunk is of such a kind as to allow of its yielding under the application of external force; so that fractures are uncommon. Some parts, however, which are placed nearest the surface of the body, and which project particularly, may be broken: the acromion especially, the inferior angle of the scapula, and more rarely the coracoid process and neck of the bone. Now, as it regards the inferior angle, the acromion, and the coracoid process, all that can be done in the case of fracture affecting these parts, is to keep the upper extremity at rest; for when that moves the scapula will move also;—and we may, perhaps, in some measure assist the apposition and consolidation of the fracture by the relaxation (through the particular position of the upper extremity) of a particular muscle connected with the broken part of the bone, or by the application of some local compress. We cannot, however, do much by any kind of apparatus.

Fracture of the *neck* of the scapula is spoken of as if it were a common occurrence. I have seen many cases that have been said to be fracture of the neck of the scapula. Now this is completely an internal part; it is so protected by the acromion, the clavicle, and the coracoid process, and the head of the humerus, that it cannot well be frequently broken; in addition to which, any force applied to the part must lose its influence, in a great measure, by the yielding of the scapula. I should rather think, therefore, that fracture of the neck of the scapula is a very uncommon occurrence; and I am the more inclined to hold this opinion from never having seen, in any anatomical museum, a specimen of such an accident. I should think that the cases which are supposed so frequently to be fractures of the neck of the scapula, are, indeed, fractures of the humerus high up; it must, at all events, be extremely difficult to establish the *diagnosis* between these. Independent of the mobility of the scapula, the fracture, when seated under the thickness of muscle that surrounds the shoulder-joint, renders it a matter of difficulty to know whether fracture has taken place at all; and of course it is still more difficult to arrive at a knowledge of the exact part of the bone which may have been broken.

In reference to *treatment*, however, there is no material difference between that you should pursue if the neck of the scapula be fractured and that you should pursue if

the humerus be fractured high up. In both cases, the weight of the upper extremity must be sustained by means of a sling that supports the elbow, and the shoulder and humerus generally must be firmly fixed by a broad bandage to the side. That is the course of proceeding, whether the neck of the scapula or the head of the humerus has been broken.

#### *Fractures of the Humerus.*

The *humerus* may be broken in any part from the head down to the inferior articular extremity.

Fracture of the *neck* of the humerus is often spoken of. This, I suppose, is hardly to be understood in a strict sense; for the neck of the humerus, *anatomically* speaking, is the portion immediately surrounding the hemispherical prominence which is articulated to the glenoid cavity. But this is a part of the bone particularly strong, and therefore seems not likely to be fractured. When we speak *surgically* of the fracture of the humerus, I suppose we must include all the fractures that occur above the insertion of the deltoid muscle—that is, the fractures that occur high up in the bone, without mentioning the exact limits.

I have already mentioned to you that in this case we can do nothing more except support the weight of the limb, and keep it firmly fixed to the side, as the readiest way of maintaining the fractured ends in apposition, and keeping it in the necessary degree of quietude for the purpose of bony union. It may happen if a person be thin, and we can feel the exact situation of the fracture, that we may assist the apposition of the fracture by placing a pad in the axilla; or we may apply a pad externally. There are minute circumstances that must be judged of in each particular case; but the principle of the treatment consists in supporting the weight of the extremity, and in maintaining the apposition by fixing the arm against the side.

In the case of fracture occurring in the shaft of the bone, as we have the whole of this immediately under our observation, the breach of continuity is easily ascertained, and there is no difficulty, generally speaking, in maintaining the broken ends in apposition; indeed the very weight of the inferior part of the fractured bone, and the upper extremity which is attached to it, keep up a distention which prevents the displacement and the overlapping of the fracture that might otherwise occur.

In treating such a fracture, we may apply a circular bandage to the upper extremity, commencing at the wrist and carrying on the application, continuing it over the elbow and over the fractured part; and then we may include the fractured bone in two,

three, or four splints, according to circumstances;—and sometimes, after using a certain part of the bandage to perform the circular rolling of the limb which I have mentioned, some surgeons employ the rest in carrying it round the splints, so as to confine them on the limb.

The humerus may be broken at the lower part, the fracture extending longitudinally into the elbow-joint. Sometimes one of the condyles of the humerus is broken, and in the majority of such cases, the fracture embraces rather more than the part to which the anatomical term, condyle, is applied,—it embraces a part of the articular extremity of the bone, in which instance there may be a longitudinal fracture extending to a certain degree above the elbow-joint, a transverse fracture forming the termination of it. This complication of injury generally gives rise to swelling of the joint, the effusion of fluid into its cavity, pain in the part, and symptoms which require the application of leeches, or other antiphlogistic treatment, before we can proceed to confine the bone with a view to its consolidation.

When the inflammation has been abated, we then confine the fractured parts by means of the same kind of splints that are used for fractures of the upper extremities. These, however, do not so completely retain the bone in apposition in some instances as could be wished, and under such circumstances we may deem it expedient to employ a bent splint, so as to embrace the fore arm as well as the arm. Indeed, Mr. Amesbury, whose observations I have already had occasion to allude to, recommends, in fracture of the arm, the application of bent splints. He employs splints bent at right angles,—not a splint with a hinge, but with a firm angle, of which the upper part is adapted to the fracture of the humerus, and the lower part to the fore arm. He also employs three other splints, which surround the arm in other directions, as the object is to keep the fore arm, as well as the humerus, in a proper position. In such cases, another mode of proceeding has been recommended, which is, to employ wetted pieces of pasteboard on the fractured limb, so as to form a cast of the part;—when it is dry, to take it off, and line it with wash leather, or some other soft substance, and to use it as a firm case for retaining in their right position the elbow, fore arm, and upper arm.

After a certain time has elapsed—say at the end of a fortnight or three weeks—in cases of fracture extending into the elbow joint, as, indeed, in instances of fracture extending into any other joint, it is expedient for the surgeon gently to move the parts, so as to prevent subsequent stiffness of the joint—to give them what we call *passive motion*,—not to allow the patient to move the parts,

but the surgeon to move them himself, so as to ascertain that the articular surfaces have their proper situation, and the due facility of motion upon each other.

#### *Fractures of the Fore-arm.*

The bones of the *fore-arm* may be both broken together, or they may be broken separately. In the former case, you have a deformity of the limb—an unnatural curvature, and you have crepitus in moving the parts. When both bones are broken, your object is to keep them in apposition parallel to each other, and in a perfectly quiet state, until their consolidation shall be effected. The attitude of the limb, therefore, is that in which the palm of the hand is turned to the chest—in which the thumb is upwards and the little finger downwards, so that the hand is perpendicular; and in this state the radius and the ulna are parallel to each other. If you allow pronation or supination, you no longer have the bones parallel, and probably you find that the fragments, particularly of the radius, will not be in proper apposition. It is not likely that the hand will fall into the supine state; but that, if not supported, it will fall into the prone state, and then the part connected with the humerus remains in a proper position, while the other is carried forward by the hand out of the parallel direction. The flexure, therefore, of the elbow at right angles, with the palm of the hand perpendicular and turned to the chest, with the thumb upwards and the little finger downwards, constitutes the proper position in fracture of the fore-arm, whether one or both bones be broken. Then you place splints, one on the outer and one on the inner side of the limb. You have these splints lined by a thick compress, which should correspond to the interval between the two bones, and you bind them either by a bandage, or secure them by tapes. The splints should be long enough to extend to the hand,—at all events, the inner splint should reach the palm of the hand, so as to support the thumb, to prevent it from being displaced. A circular bandage is not well suited to a fracture of the fore-arm, because when you come to surround circularly the part where the fracture has taken place, you would bend the fractured ends inwards; and if care were not taken under such circumstances, you might have the fractured extremities of the radius and ulna united together, so that, indeed, it would be impracticable to perform pronation and supination. Such things have occurred. The necessity of preventing this displacement in the fore-arm has appeared in so strong a light to Mr. Amesbury, that he recommends convex splints,—the convexity of the splint pressing inwards towards the interosseous ligament, and thus preventing the inward displacement of the broken ends. The com-

mon splints, however, will answer the purpose.

The *radius* is much more frequently broken singly than the *ulna*, for the *radius* constitutes almost entirely the articular surface which supports the hand; and fracture of the *radius* occurs in consequence of force applied to the hand, as in the case of a person falling he stretches out the hand to prevent his body from coming to the ground: here we have no deformity of the limb, nor much displacement of the fragments, because the *ulna* supports the parts. The treatment of the fracture, so far as bandages and splints go, is the same as if both bones were broken.

The *radius* is sometimes broken near the wrist, in the thick part which constitutes the articular surface that joins the bones of carpus. It has been proposed by Mr. Cline to let the hand fall downwards in this case, so as to draw the short fragment of the *radius* upwards. Under such circumstances, however, there is no great risk of displacement.

Perhaps the most frequent fracture of the *ulna* singly, is that of the olecranon, and the mode in which this process projects renders it very much exposed to external violence, more especially in consequence of falls, so that we are not surprised that fracture of this part should be so common. In fracture of the olecranon, you may have either the small bit of bone broken off, which is immediately connected with the tendon of the triceps, or you may have fracture occurring in the middle of the part which forms the great semilunar cavity. When this fracture takes place, it is sometimes attended with considerable displacement, that is, with a retraction of the part which is connected with the tendon of the triceps; but, in many instances, the part is not materially displaced, and, indeed, either in the one case or in the other, we usually find, if the elbow be brought into an extended position, the fragments are nearly, if not completely in apposition.

The excavation in the olecranon, the way in which the sigmoid cavity moves on the humerus in the actions of the extension and flexion, contribute to fix the end of the *ulna* in a position that prevents lateral displacement. The only displacement that can take place is in consequence of the extremity of the *ulna* being drawn upwards towards the arm by the action of the triceps, or in consequence of the flexion of the fore arm. There is a great difference in the situation of the olecranon, in the bent and extended states of the joint,—there is a difference of an inch or an inch and a half; supposing, therefore, the broken end of the bone was in the natural position, if you bend the elbow you have displacement, not in consequence of the retraction of the fractured part, but in consequence of the movement of the body of the *ulna* from the fractured part.

Now it has been generally said, that in fracture of the olecranon you must keep the arm extended,—that you should place a splint on the palmar aspect of the elbow joint, covering the inferior half of the humerus and the upper half of the fore-arm. I must observe to you that this is a very unpleasant position for the arm to remain in; for, if you make the experiment yourselves, by putting the elbow joint in a forced extension, you will not like to retain it there long. Patients feel it irksome—they do not like to keep it in that position for the time that is required; and great stiffness is produced in the joint afterwards, in consequence of the stretching of the ligament and muscles which that extension requires. In most cases, this position is not necessary, and in general you may keep the elbow in a half bent position, and you would find the fracture will come pretty much as you wish it to do. You may apply a circular roller to the upper arm, commencing above, and carrying it downwards, so as to prevent the contraction of the triceps. You may employ lateral compresses, so as to fix the broken part of the olecranon in a proper position; then you maintain the arm in this position by means of a pasteboard splint applied to the part, and accommodated to the form of the limb, one before and another behind, so as to encase the arm. This is the treatment recommended by Mr. Earle, in some observations which he has made on the subject; and, I think, he has with propriety enforced the advice given by Desault and others, who have pointed out the inconvenience that results from keeping the elbow joint in a forced extension.

A fracture of the *ulna* in any part of its shaft below the elbow joint, is to be treated by the same apparatus, splints, and bandages, which are proper in any fracture of the fore-arm.

Fracture of the *carpus* cannot take place except in consequence of comminuted and extensive injury of the bones. We do not see fracture of one particular bone,—they are too small, and too much surrounded by ligaments and soft parts, to admit of that.

Fracture of the *metacarpus*, or of the individual bones of the fingers or thumb, must be treated by keeping the hand generally in a state of rest. So far as the *metacarpus* goes, the ends of the fracture are not generally displaced; so that if we keep the hand at rest, no more is necessary.

In case of either the thumb or the fingers being broken, the application of pasteboard splints, one on the outer part of the fracture, and another on the inner, confined by sticking or soap plaister, answers all the necessary purposes.



## LECTURE LI.

*Fractures of the Femur:—a, of the Neck of the Femur—b, of the Upper Third of the Femur—c, of the Shaft of the Femur—d, of the Lower Third of the Femur.*

THE femur, like the humerus, may be broken in any part from the immediate neighbourhood of the head which is received into the cotyloid cavity of the pelvis down to the condyles which rest upon the superior articular surface of the tibia. There is no portion of the bone between these two points which is not liable to fracture.

When you observe the comparatively slender portion which connects the head of the bone to the upper extremity of the shaft to which the name of *neck* is given—when you see that the weight of the whole body rests upon the superior surface of the head of one femur when the body is supported upon one extremity—you would naturally expect that the neck of the thigh-bone should be very frequently fractured, and we find accordingly that it does very frequently experience this kind of accident, but not under the circumstances that I have just alluded to. The fracture of the neck of the thigh-bone does not happen, as you might suppose, when one limb comes to the ground so that the weight of the body rests entirely upon the neck of the thigh-bone upon that side; but it happens generally in consequence of a fall upon the trochanter major, when the individual slips in walking, and falls down upon that side of the pelvis on which the slip takes place. Under these circumstances the slender neck of the thigh-bone is exposed to the action of two forces in opposite directions—the impulse against the trochanter which comes to the ground, and the weight of the trunk of the body which is supported on the head of the bone.

Now the fractures of the neck of the thigh-bone, or at least the cases which *surgically* are arranged under that denomination, include a considerable variety of accidents, or at least accidents in which the circumstances vary considerably. After a fall of the kind that I have mentioned to you, the patient finds himself totally unable to use the limb; he is helped from the ground; he feels that he cannot support the trunk of the body upon the lower extremity of that side—that he is totally unable to use the limb; he is obliged to be supported or carried to his dwelling. He now finds that he is unable to bend the hip-joint—to raise the knee from the bed on which he lies. If you direct him to do so, he will put his hand to the part, and attempt to raise the limb in that way; and you sometimes find, that even independently of this, the limb can be a little raised by voluntary effort from the surface of the bed, and the patient, at all events, by supporting the limb

with his own hands, can elevate it considerably towards the bent position. The patient has very little power of turning the foot outwards or inwards; the motions of abduction and adduction are attended with very considerable pain. When you come to examine a patient who has experienced an accident of this kind, you find that the thigh, the leg, and the foot, that is, the whole of the lower extremity, are turned outwards, or in anatomical language, rotated outwards; that is, the foot inclines from the body on the external edge; the external surface of the knee, leg, and thigh rest upon the bed, so that the whole of the lower extremity is in the state of eversion. This circumstance, perhaps, may partly be ascribed to the natural position which the limb will take when it is left to its own weight; for if you place the limb straight on a level surface, and if no muscular action take place, it will by its own weight turn outwards, so as to lie upon the external surface, but no doubt it must be principally owing to the action of the muscles, several of which have the immediate office of everting or rotating the limb outwards, and several others have that office in a secondary way. Most of the large muscles that are implanted in the thigh-bone derive their origin from the pelvis, the *gluteus maximus* and *minimus*, the *iliacus internus*, and the large muscles that lie on the inside of the thigh; all these, though they have different offices of a primary nature, have the effect of turning the limb outwards; in addition to which, there are several small muscles seated about the thigh-bone, the direct office of which is to rotate the limb outwards. When, then, the neck of the thigh-bone is broken, so that the bone has no longer a connexion with the body, the limb turns in the direction in which the most powerful muscles will bring it, and that is the state of eversion or rotation outwards.

The circumstances that I have now mentioned will already have given you a general notion how to recognise a fracture of the neck of the thigh-bone;—a fall upon the trochanter major, an inability to move the limb by voluntary effort, a want of power over, and a condition of eversion of the foot and lower extremity generally. Now this condition of eversion is not invariable, for sometimes there is the opposite state; a turning of the foot inwards is observed to take place: this, however, is a rare occurrence, and I cannot say that I ever saw it myself; but instances are mentioned in which the foot has been turned inwards where it has been found that the neck of the thigh-bone has been fractured. Hitherto this deviation from the ordinary course of events has not to my mind been satisfactorily explained.

Then there is another circumstance which is characteristic of the fracture of the neck

of the thigh-bone, that is, a shortening of the limb. When the neck of the femur is broken, the muscles which pass from the pelvis to the thigh or the leg, by their contraction have the effect of drawing the bone upwards so as to carry the external or inferior fragment beyond the superior or internal edge of the fracture, and thus to draw the shaft of the bone above the broken fragment which remains in the cotyloid cavity. This shortening of the limb takes place to various extents, seldom more than about an inch at the commencement of the affection. Sometimes the limb appears at the very beginning to be of the same length with the opposite one, but there is a secondary retraction of the bone. The limb, which at first was of the same length with the other, becomes shortened in a few days, or at least in a short time after the occurrence of the accident. This shortened state of the limb is not a fixed or permanent condition; as it depends upon the muscular action, you can put an end to it by applying force to the limb superior to that of the muscles by which the retraction is effected. By pulling upon the lower end of the femur, or by pulling upon the leg, you can bring it down so as to make it of the same length with the other; and when you have done so, if you leave the limb at rest, you probably see it gradually drawn up again to its former position. That is a circumstance which particularly distinguishes the displacement that takes place in a fracture of the neck of the thigh-bone from any kind of displacement that can be the result of dislocation, because in the latter case the limb is permanently and immoveably fixed in the unnatural situation. If considerable retraction should have taken place, you will not expect to find that particular symptom of fracture which is called crepitus, because the displacement of the fractured ends occasions them no longer to correspond to each other; so that when you move the limb you do not have the broken ends grating on each other. But you may have crepitus after you have drawn the retracted limb downwards in the way that I have described, because then you make the broken ends correspond. Still as the part of the bone which is left in the os innominatum is not subject to direct pressure, it may move with the rest when we put the limb in various positions; it might move so that you would have no crepitus. I should say, that in the majority of instances of fracture of the neck of the thigh-bone, you do not succeed in distinguishing this particular evidence of the accident. The way in which you sometimes detect it in fracture of the neck of the thigh-bone is by drawing the limb down to the same length as the other, pressing the head of the bone so as to fix it in the acetabulum, and then producing such motion of the limb as is likely to cause the broken ends to rub against each other. But

you are not to consider this an essential circumstance in ascertaining a fracture of the neck of the thigh-bone; the combination of the other circumstances that I have mentioned will be sufficient of themselves without this to shew the nature of the accident.

I should observe to you that the accident in question does not take place in young subjects; it hardly takes place even in the middle period of life, but it usually occurs in persons who have passed that age, and more commonly in those who are advanced in years. It seems that in them the osseous system in general does not possess that solidity of structure which belongs to the earlier period of life, and that the neck of the thigh-bone in particular acquires a degree of softness, so that it gives way more readily under the application of external force.

Then in case of an accident such as I have described, when the patient has been laid quietly in bed, and has either been left without such surgical attention, or received such an adjustment of the broken limb as may have been considered suitable—after a certain length of time has elapsed—after the usual period has gone by which is found adequate to the consolidation of the fractured bone—when the patient gets out of bed, and begins to use the limb, the result of the accident will be found to be very various. In some subjects, particularly in the more elderly, the part which has received the injury seems to continue, to use the patient's phrase, *very weak*; the patient has very little power of supporting the weight of the body on the fractured side, or of moving the limb. But after some time the patient moves about with crutches, using the limb very imperfectly; and perhaps continues through life with this very imperfect motion of the extremity, the patient being scarcely able to support the weight of the body, and dragging himself about with the support of crutches or sticks. In other instances the broken bone appears to acquire the proper solidity. After the lapse of perhaps eight or ten weeks, there appears to be so much strength in the broken part that the patient is able to move about with crutches, and he soon finds that he can dispense with their use, and a firm and tolerably free motion of the limb is recovered. The difference of this result no doubt arises from the difference in the circumstances that I have before alluded to, which accompany the accident. For in the first place, under the description of such accident, we may have fracture passing completely through the thigh-bone within the attachment of the capsule of the hip-joint, and we may have the bones with the membranes that cover it completely divided. We may have a part of the bone fractured, but not completely broken through. We may have the osseous part pretty effectually fractured, and yet a considerable part of the membranous in-

vestment remaining entire; and instances have been known where the neck of the bone has been actually broken through, so that upon sawing it through a distinct line of fracture has been perceptible, and yet the bone not at all displaced, and none of the membranous coverings have been ruptured. Under such circumstances you would not have retraction of the limb, and probably no eversion. Then you may have fracture close to the point where the neck is attached to the base of the trochanter—that is, seated externally to the attachment of the capsular ligament; or you may have a fracture partly seated externally to the capsule, and partly continuing on the inside of it. You may also have a fracture of the trochanter major itself; and although, in point of situation, it is very different from the true neck of the bone, yet surgically, in reference to the symptoms produced, and in reference to our power of establishing the diagnosis, in many cases it passes during the life of the patient under the denomination of fracture of the neck of the thigh-bone. We cannot distinguish, perhaps, during the patient's life, between this fracture and that of the neck; and probably we should not adopt any material difference in the course of treatment in the two cases. Sometimes, if the neck of the bone be broken, there is also some kind of cracking of the trochanter, and the fragments may be driven between the fragments of the trochanter, so as to become mechanically locked between them. There are on the table a variety of specimens illustrating these different kinds of fracture.

[Mr. Lawrence then presented the following specimens:—First, a fracture pretty close to the head of the bone, where the head was left in the cotyloid cavity; secondly, a fracture within the capsule, without any kind of union; thirdly, a fracture close to the head of the bone; fourthly, fracture within the capsule, with the membranous covering still partly attached; fifthly, a fracture occurring pretty close up to the head of the bone, within the attachment of the ligament of the joint; sixthly, fracture pretty close to the base of the neck, with some of the membranous attachment remaining entire towards the lower part; seventhly, several fractures of the neck, complicated with fracture of the trochanter—*a*, the trochanter broken to pieces, with the neck driven in among the fractured portions—*b*, another example of the same kind—*c*, the upper part of the bone and the neck broken into several fragments—*d*, a case where the fractured neck was completely driven in between the two parts of the broken trochanter, so that it was mechanically locked in that situation.]

If the neck of the bone be completely broken through, the fracture dividing both the osseous substance and the membranous

investment of the bone within the attachment of the capsular ligament, it has been found almost invariably that no union whatever takes place in such a fracture; and whether you examine the case early or late after the occurrence of the accident, the fragments of the bone are found completely ununited. If they are examined at a late period after the occurrence of the accident, the neck of the bone seems to have disappeared—we might almost fancy it had been worn away by friction in the motion of the limb between the two ends of the broken bone; at all events the head of the bone, which remains in the cotyloid cavity, is nearly in contact with the trochanter major. This is found so common a result of fracture occurring in that particular situation, that persons of very great experience, who have investigated a vast number of such cases, have come to the conclusion that bony union cannot take place in this accident; and there are peculiar circumstances in respect to the situation of the fragment of the bone, which remains connected to the pelvis, which perhaps tend to explain this impossibility—or this very rare occurrence of bony union. If the bone be completely broken through, with its membranes, the supply of blood which the head of the bone receives from the arteries that ramify in the substance of the bone is completely cut off, so that the fragment which remains connected with the pelvis does not receive any vascular supply except what comes to it by the small vessels which are contained in the ligamentum teres.

Then in the next place, supposing the soft parts to be completely torn through, the fragments of the fracture are not held together, and their consolidation is not assisted by that swelling of the external soft parts and of the periosteum, which I have mentioned to you already as constituting the temporary callus. In this respect the neck of the thigh bone is differently circumstanced in reference to its consolidation from any other cylindrical bone in the body: the help or assistance which exists in all other bones, in reference to maintaining the fragments together while their actual consolidation goes on, does not exist in this instance. Again—the retraction of the body of the thigh bone, in consequence of the action of the muscles, which I have already described to you, occasions the broken ends not to correspond to each other; the broken ends, generally speaking, (I am speaking of a case of *complete* division of the neck) do not correspond to each other, and thus another condition necessary for consolidation is wanting. In the motions of the limb and of the pelvis, in reference to each other, there is a constant separation of the broken surfaces from each other, and they are not at any time found in close and complete contact. All these circumstances



tend to explain why, in general, the ends of the fractured neck of the thigh bone are not consolidated when the fracture has taken place in the particular situation that I have now mentioned. In some instances, we find that the surface of the fractured ends, instead of being united, receive a kind of smooth polish, which almost forms an artificial joint.

[Mr. Lawrence exhibited a specimen in illustration of this, in which the two smooth surfaces meeting together almost formed an artificial joint. When the head was compared with the shaft of the bone, the neck seemed to have disappeared.]

Then the age of the individual in whom this accident takes place, the kind of softening which the neck has already experienced, the imperfection of the restorative process in advanced age, contribute, with the circumstances that I have just mentioned, to explain the absence of the restorative power which is necessary to the consolidation of the fracture. These circumstances, together with the examination of a great multitude of cases, have appeared so strong in the minds of some of those who have investigated this subject, that they have declared pretty decidedly that the neck of the bone, when broken through within the capsular ligament, cannot be united by bone; and we must acknowledge that the result of those cases in which fracture has happened in this way, tends to confirm that conclusion. Others have contended that the neck of the thigh-bone may be united by osseous union, in the same way as any other part, and that the want of union arises from the want of judicious means having been adopted for placing the extremities of the fracture in apposition to each other, and for maintaining them in that situation. They have contended, that if well-devised means were employed for that purpose, we might expect fractures of the neck of the thigh-bone to unite as frequently and favourably as fractures in other situations.

In order to prove that fractures of the neck of the thigh-bone may unite, it would be necessary to shew us a fracture that had united; because, if one specimen can be shewn, then there is an end to all dispute on the subject. I believe that the fact can be shewn—that instances may be adduced in which the neck of the thigh-bone, in the particular situation that I am now alluding to, have become consolidated by bony union; but probably these instances are not to be found among the cases of elderly subjects that have experienced this accident.

Mr. Langstaff, who has an extensive collection of specimens of this kind, has pointed out, in a paper that he communicated to the Medico-Chirurgical Society, that in many cases of such accident, changes are found to have taken place in the frac-

ture which are the obvious commencement of a restorative process, and which, if carried farther, might justly have been expected to end in bony consolidation. He has shewn, for example, that ligamentous union may form between the ends of the broken bone under such circumstances; and if that can take place—if there is a sufficient vascular supply to the head of the bone to enable it to form ligament, we can see no reason why the process should not go so much farther as to produce ossific consolidation. We certainly see that certain changes do take place in the fractured head of the femur—that is, the surface becomes smooth, the cancellous structure that is exposed becomes more consolidated and harder, and, in fact, that changes take place which obviously imply vascular action in the bone.

In the plate which I now shew you, there is a representation of a fracture of the neck of the thigh-bone, which took place in a gentleman with whom I was well acquainted, (a member of our own profession,) and which occurred at that period of life when the restorative powers are in full activity; so that he was under circumstances favourable for ossific consolidation. The three upper figures represent the thigh bone which had experienced the accident, and the two lower figures represent the sound thigh bone, in order to contrast the appearance of the two. This gentleman was under the age of 50; he was a fellow student of mine in this hospital, and resided at Bourdeaux, in France. He was thrown from his horse, and fell upon his side, coming on the trochanter. He was taken up, and was placed under the care of M. Brulatour, a well-informed man, surgeon to a large hospital at Bourdeaux. This gentleman recognized all the symptoms which denote a fracture of the neck of the thigh bone, and the patient also was satisfied that this had occurred. He was treated on the plan of permanent extension, and at the end of eight weeks the fracture was so much consolidated that he was able to walk about with crutches; at the end of two or three weeks more, the limb was so strong that he was able to lay aside the crutches and to use the limb as freely as before, no alteration remaining, except a trifling shortening. In less than a year he died, and an opportunity was thus afforded of examining the state of the bone in which the accident had occurred. The two outer figures of this upper series [pointing to the plate] represent the anterior and posterior views of the broken bone, and the two lower ones represent similar views of the sound bone, in order that you may contrast the appearances presented in the two instances; and here you observe in this case, where the most perfect ossific consolidation had taken place, the same shortening and entire disappearance of the neck of the

bone had occurred as I have already mentioned to you: you observe that the head of the bone is approximated to the great trochanter. Then, on sawing the bone through, which was done horizontally, there is a distinct line, shewing where the fracture had taken place, which has become consolidated, so as to render the bone at that point at least as firm as at any other part. I saw the bone myself, for it was brought here by M. Brulatour, and could not entertain a doubt that the fracture had passed through the neck of the femur with the capsular ligament; and it was in less than twelve months from the time of the accident that the patient died; yet the limb was so completely restored that he could walk nearly as well upon it as if the accident had not taken place. It is thus shewn that the injury admits of complete reparation, under circumstances favourable in respect to the age and constitutional powers of the individual. Mr. Langstaff possesses a specimen in his museum—one taken from a much older subject—in which there is ossific union with absorption of the neck of the bone; and in the work of Mr. Amesbury there is a representation of another case, which occurred to Mr. Chorley, of Leeds, and in which a similar union took place, which was also attended with absorption of the neck of the bone.

In respect now to the particular circumstances of the removal, the absorption, or destruction of the neck of the thigh bone, so far as the specimens hitherto presented go, it would seem to occur both in cases where no ossific union of the neck of the bone takes place and in those in which such ossific union is effected. You will of course easily understand, that if fracture through the neck of the bone occurs externally to the capsular ligament, there is no reason whatever why it should not become consolidated by ossific union, just as fractures do in other situations. The same reasoning applies to any of those instances of fracture which extend, in various directions, through the trochanter at the upper part of the bone. You will also understand, that if the neck of the bone be broken through, with the investing membrane left in great part entire, osseous consolidation may be expected. Thus, from the variety of circumstances under which the accident takes place, we are led to explain the variety of results in cases of this kind.

Now it is invariably remarked by those gentlemen who have advanced the possibility of osseous consolidation of the broken neck of the thigh bone, that we ought at all events in these cases, to employ every effort we can to replace the fracture—that is, to bring the extremities of the broken bone into a right bearing towards each other, and to maintain them in apposition, in order to favour the occurrence of bony union.

They observe, that if the fracture of the neck of the thigh bone be left to itself—if no pains be taken to bring the bones into proper relation, and to keep them so, we cannot reasonably expect that ossific union will take place. When we consider that this fracture presents peculiar difficulties, their advice appears judicious, and we may adopt their practical rules, at all events, of taking all the pains in our power to promote union, by approximating the broken ends as much as possible; a circumstance which is allowed, even in ordinary cases, to be of great importance.

The question then occurs, what course we can with advantage take, in order to facilitate the consolidation of this fracture? The mode in which the head of the bone is lodged in the cotyloid cavity of the pelvis, renders it impossible to act upon it directly; we can only do this as regards the thigh bone and pelvis. If we could employ any position, or any apparatus that should completely fix the thigh bone and pelvis in relation to each other, we might accomplish the object. Now Desault and Boyer have had recourse, for this purpose, to contrivances for keeping up permanent extension of the lower extremity, in order to promote the counteraction—that retraction of the limb which results from the action of the muscles, as I have already mentioned. This, in many cases, is found difficult; at all events it is extremely painful, so that the patient cannot well bear it;—but I would just observe to you, that the gentleman whose bone is represented in this lithographic plate underwent this treatment, and with the favourable result you there see. However it is probable that the end can be accomplished without this, as the fracture-beds of Mr. Earle and Mr. Amesbury supply us with the power of accomplishing the purpose by means of the double-inclined plane, which supports the thigh and leg. In this way the pelvis rests completely at the lower end of the upper portion of the double-inclined plane. That portion of the inclined plane which corresponds to the thigh, must be made to correspond, in point of length, to the sound limb; and in these beds there is a contrivance, at least there is such in Mr. Amesbury's, for lengthening that part of the bed which corresponds to the thigh, or for shortening it, so as to make it correspond to the sound limb. Then you lay the fractured limb over it; the foot of the injured side is confined to the board which is placed at the extremity of the outer part of the inclined plane; the knee is bent over the angle of the inclined plane. Thus the position of the limb on the inclined plane keeps up as much permanent extension as is necessary for the purpose, while the confinement of the foot to the foot-board prevents the eversion of the foot and lower

extremity, and keeps the whole of the limb in its proper and natural position. This apparatus, then, accomplishes the three purposes—of fixing the pelvis, of maintaining the injured limb extended to the same length as the sound limb, and of preventing eversion. The only other purpose to be accomplished is to keep the two extremities of the fracture in apposition; and this may be effected by a strap round them in the situation of the trochanter, or by placing a common broad splint on the outside of the thigh, reaching above to the trochanter, with a belt round the pelvis, and confining the lower end of the splint to the lower part of the thigh. Thus you have pressure on the trochanter capable of keeping it in apposition with that part of the bone that is in the cotyloid cavity. This seems the best mode of remedying the complication which is presented by fracture of the neck of the thigh bone; and it is the best course to adopt in those accidents generally, which, whether there be fracture of the neck of the thigh bone, or of the trochanter, or of the upper part of the thigh bone, can hardly be distinguished from each other during life. By such a course of proceeding you will at all events give an opportunity for the occurrence of osseous consolidation, if the powers of nature should be adequate to that purpose.

#### *Fracture of the Upper-third of the Thigh Bone.*

In fracture of the upper part of the thigh bone below the trochanter, you may have, in consequence of the displacement of the several ends of the fracture, a very serious subsequent deformity, of which this specimen [shewing it] will give you an example. Here you observe that the fracture has occurred just above the little trochanter, and that the upper extremity of the bone has been so drawn upwards and forwards, that it has united to the shaft of the bone at nearly a right angle. You see here what great deformity has arisen from fracture occurring near the upper end of the thigh bone:—in fact, if fracture take place any where in the upper-third of the thigh bone, the case is capable of producing considerable deformity. This [shewing it] is an example of a similar kind, where fracture has taken place as much as two inches below the trochanter minor. Here you observe the upper extremity of the bone drawn upwards and forwards, so as to make a considerable angle with the shaft of the bone.

In a fracture of the upper third of the thigh bone, inasmuch as you cannot effectively depress the upper end of the bone which is drawn forward, you must raise the lower extremity to a level with it, and this is best accomplished by the fracture bed that I have just described, which, presenting a double inclined plane, will enable you to raise the lower part of the fractured bone to

its proper level. But in addition to the position of the limb, you must confine it by three splints,—an external, an internal, and an anterior one. You also apply soap plaster in the neighbourhood of the wound, and the many-tailed bandage.

#### *Fracture of the Shaft of the Thigh Bone.*

Fracture of the shaft of the thigh bone more commonly takes place below the middle, or in the lower third, and in respect to this, as well as, indeed, to fracture of the bone generally, a great difference of opinion has prevailed as to the proper position of the limb. Mr. Pott recommended the bent position of the knee, with the limb resting upon its external surface, so that the patient should lie on his side, the trochanter major being upon the surface of the bed, and the external condyle and the knee about half bent. That is the doctrine which Mr. Pott inculcated, and which, from his recommendation and his writings, has very commonly been adopted in England since his time—the half-bent position of the knee, with the fractured thigh resting upon its external surface.

In France, on the contrary—more especially since the time of Desault—it has been the practice to lay the limb in the extended or straight position; and I should have no hesitation in stating, that if the question were simply between the bent and the straight position, that the French plan is the best. The truth is; the patient cannot, and will not, support the bent position, with the body resting upon the trochanter, and the knee upon the external condyle. You may put it in such a position after the accident, but the patient cannot remain constantly in that attitude. The pelvis sinks down, the person gets on his back, the limb remains on the side, and the consequence is, that the thigh bone unites in an imperfect way, and the knee and the foot are permanently turned outwards or everted. The straight position avoids this inconvenience; for, when you have put on splints, and placed the limb properly in the extended position, you may calculate upon the person remaining on his back. I believe general experience has decided on the straight position for fracture of the thigh, in preference to the bent one. There is also another kind of position lately adopted in this country, that is, the bent position, with the patient on his back, employing a double inclined plane, the extremity being in a position essentially similar to that which I have described to you as proper to be adopted in fracture of the neck of the thigh bone. It is often employed on the ordinary bed, using a simple double-inclined plane, composed of little more than two boards, one part of which corresponds to the thigh, and the other to the leg; to which also must be appended a foot-board, to fix the foot, and prevent it being turned outwards.



With this position, the employment of splints laterally and anteriorly should of course be combined.

*Fracture of the Lower third of the Thigh-bone.*

You here see a specimen where the fracture has extended into the joint—comminuted fracture, extending into the articulation. In these cases, if the fragments be not displaced, it is not, I apprehend, very material whether the limb be placed in a straight position, or whether it be placed in the half bent position on the inclined plain. It is said, by putting the limb in a straight position, that the pressure of the upper extremity of the tibia more readily fixes and retains in its proper position the broken fragments of the femur. In this case, where the two condyles of the femur are split through the middle, attended by the displacement of one of them, the position of the tibia might keep them more exactly apposed to each other. However, when fragments take place in the condyles, not attended with such displacement, (I have, at all events, seen several such instances) the patient does very well where he is not placed in a half-bent position on an inclined plane.

[Mr. Lawrence then shewed two specimens; in one the fracture passed through the middle of the cavity which lodges the patella; in the other the condyle was broken in the thick part.]

In these instances you may expect there will be inflammation of the synovial membrane; increased secretion, and more or less of swelling, heat, and redness of the knee-joint. You must, of course, adopt proper antiphlogistic remedies to combat these symptoms; and when they are sufficiently removed, you must then use the mechanical means that are necessary for confining the fragment of the broken bone in a proper position. Although such cases very often present rather formidable appearances during the period of active disturbance, yet you find that under the judicious application of antiphlogistic means, the symptoms are removed, and that in general the case does well. You will, of course, be aware of the necessity in these instances of what I had occasion to mention to you respecting fracture of the olecranon, namely, giving passive motion to the joint in the course of three or four weeks after the occurrence of the accident, in order to prevent the possibility of stiffness or any thing like permanent ankylosis.

LECTURE LII.

*Recapitulation.—Fracture of the Patella, of the Leg, and of the Bones of the Foot.*

I MENTIONED to you, gentlemen, in the last lecture, the employment of the double-in-

clined plane in fractures of the thigh; and I spoke to you then of placing the lower extremity in that position on a bed which was particularly adapted for the treatment of these accidents, being itself so arranged as to admit of the limb being placed on a double-inclined plane. I mentioned to you the fracture beds that have been devised by Mr. Earle and Mr. Amesbury; but you may employ the double-inclined plane separately on a common bed.

[Mr. Lawrence here exhibited a contrivance of this kind, in which there was a strap or band attached, calculated to fix the pelvis. It consisted of a double-inclined plane, one part being adapted to the thigh and the other to the leg.]

You will understand, of course, that when any instrument of this kind is used, pads are placed over the surface of the wood, in order that the limb may be easy. You will observe that the instrument is so contrived, that it can be carried to a more acute or a more obtuse angle, at the bend which corresponds to the ham; while the part which corresponds to the thigh is so constructed as to accommodate it to the different lengths of the thighs of various individuals. Then the foot-board can be placed in different holes at the lower part of the instrument, so as to make it correspond to the exact length of the leg. By this instrument, when properly adjusted, you render the leg and thigh fixed and immoveable, bringing it to the state of a single piece; this, however, is more completely accomplished when you place the patient on the bed that has been already mentioned. Now in practice we are often obliged to put up with imperfect contrivances, and any carpenter can put together pieces of wood of the required length, so as to accommodate it to the thigh of the individual, and make a double-inclined plane, on which the limb may be laid, while you employ side and anterior splints, in order to maintain the fragments in their proper direction.

*Fracture of the Patella.*

In the great majority of instances the fracture of the *patella* is transverse and single—the bone is broken straight across, and in one place. The bone, however, may be broken longitudinally—or it may be broken obliquely—and it is also susceptible of comminuted and of compound fracture; but the latter—that is, the oblique, the longitudinal, the comminuted, and the compound, are rare; while the simple transverse fracture is a frequent occurrence. The oblique, the longitudinal, the comminuted, and the compound fracture of the patella, are effected by means of direct violence acting immediately upon the bone—such as by a very severe blow on the knee, or a fall, when a person comes to the ground upon the patella—that

is, by some species of direct violence. But the common kind—that is, the single transverse fracture of the patella—is produced by the action of the muscles that are fixed to the bone—that is, the extensor muscles of the knee. A person who is walking is in danger of falling by his heel slipping from under him: he makes a violent effort to save himself: just as the heels are slipping forwards, and the knee is somewhat in a half-bent position, he exercises the extensor muscles of the thigh to the utmost of his power to bring the limb, and, with it, the whole of the trunk forward, in order to prevent his feet from slipping from under him. Under such circumstances, the patella is drawn forcibly by the extensor muscles against the interval of the condyles of the thigh bone: in this position the patella, supposing the ligament to be here instead of this bit of tin [in allusion to the bone which Mr. Lawrence held in his hand], would project a little above the edge of the trochlea of the femur; therefore the bone would break across in the way that a stick would snap, if force was applied to it in a similar direction against the margin of the table. The effect is produced by the convulsive action of the extensor muscles of the knee-joint—it is simply a mechanical occurrence, and is explained by the position in which the patella is placed in reference to the femur. The lower part of the bone being held perpendicularly by the ligament of the patella, and the extensor muscles of the knee drawing it nearly in right angles against the edge of the femur, the bone snaps across. You will see that when the extensor muscles of the knee-joint come into action, in order to draw the thigh upwards, to prevent the individual from falling, the whole weight of the body is carried forward, so that a violent extension is thus produced, and hence the fracture.

When the patella gives way under such circumstances, the patient falls to the ground; the fall, therefore, is the *consequence* of the fracture—the fracture does not take place in consequence of the fall.

The symptoms of fracture of the patella are an inability on the part of the patient to move the joint: the same kind of want of power is felt in respect to the motion of the knee-joint which we observe in the motion of any limb when the main bone is broken. The patient falls—he has no power of moving the part; more or less of pain is usually felt in the knee, and when we come to examine this, in consequence of the surface of the patella being covered merely by integument, we immediately recognise the division of the bone—we discover the fissure between the two parts, which is so great, that we can feel the interval between them with the finger; and the interval sometimes is so considera-

ble, that the finger in fact sinks between the fragments. The displacement that takes place under these circumstances arises from the superior fragment of the patella being drawn upwards by the contraction of the extensor muscles. This displacement, however, varies very much in its extent, and the difference arises from the circumstance of the fibrous covering and the lateral attachments of the bone being in some instances completely broke through, and in others not being divided. If this fibrous attachment be not divided, there will be a mere fracture in the patella—the fragments may remain in contact—there may be no retraction of the superior portion; but if these be divided, you have the superior fragment drawn up, one, two, three, or four, or more inches—you may have a wide interval indeed between them.

This interval you find you can diminish to a considerable extent by the position in which you place the limb. If you put the knee in the extended position, and if you also bend the thigh on the pelvis, and thereby relax all the muscles that are attached to the patella, you consequently diminish the interval between the inferior and superior fragments. The muscles that are attached to the patella, the principal—the vasti and cruralis, which cover the sides of the thigh, are completely relaxed by the extended state of the knee-joint; but the fourth, the rectus, having its origin from the pelvis, is only completely relaxed when you bend the thigh upon the trunk. The position, then, in which all the muscles are relaxed as much as possible, is the extended state of the knee, and the bent state of the hip-joint;—this consequently is the position in which the limb is to be placed in order to effect the approximation of the broken ends of the bone—and the patient is to continue with the limb in that position till the process of union is accomplished.

In a great number of instances you will find that the broken portions of the patella are so nearly approximated by this position, that you gain no further advantage by the application of bandages or apparatus of any kind; you may, therefore, in many cases, treat the fracture of the patella simply by position. When the knee is in the extended state, you certainly can gain no advantage, so far as the approximation of the broken portion of the bone goes, by any thing you can do to the lower end of the patella, for this is connected to the tuberosity of the tibia by a ligament which does not admit of extension or contraction; therefore it remains constantly in the same relative position. The upper end, which is connected with the muscles, certainly may in some degree be drawn out; it may be more or less elevated according to the condition of the muscles that are connected to it. The ap-

plication, therefore, of a bandage, and of pressure from above, may contribute in some degree to depress the superior fragment, and thus to bring it near to the inferior one. The interval between the two fragments may certainly be increased by the motion of the inferior limb, that is, if you bend the knee joint.

[Mr. Lawrence illustrated this by exhibiting the bones.]—You see you may increase the interval by moving the inferior away from the superior fragment. You observe an interval of two inches is here produced; I put my thumb against the patella in an extended state, and by bending the knee joint, I make two inches difference between the position in which the bone was, and that into which it is now brought.

You may, therefore, increase the interval between the two fragments of the patella by bending the knee, but no person would do this when the patella is fractured. When you have brought the knee joint straight, you can do no more with regard to the inferior fragment, and all your attention is directed to the superior one. In a great number of instances, you find that the position which I have already mentioned, without any kind of bandage or apparatus, will bring the broken portions of the bone as nearly in contact as you can have them by any means. Very commonly some bandage is applied to the fracture; the broken patella is bound up by a simple bandage, in the figure of eight passing above the upper fragments, and then going behind the ham, so that the two parts form the figure of eight, encircling the upper and the lower fragments, the decussation taking place in the ham. Boyer recommends a concave splint adapted to the posterior surface of the lower half of the thigh, of the knee and of the leg, occupying about two-thirds of the limb, with brass knobs on the edges at each side, and two straps coming from one side, and crossing over so as to encircle the upper fragment of the patella, and the other going below the lower—thus the two straps circumscribing the parts in an elliptical form, in which the patella is included.—[Mr. Lawrence illustrated Boyer's mode of applying the straps by a reference to two plates.]

The limb must be kept, for 5 or 6 weeks, in this attitude, with or without the assistance of apparatus, according as we find it necessary, and in that time you will find that union of the patella will have taken place; but it will not have become strong enough to enable the patient to use the limb. The patient ought not to begin to exert the muscles, particularly if he be an elderly person, in less than two months. We find that before the end of that time, the patella is not united by bone, but that its two broken parts are joined together by ligament; and it is found that if the patient begins to use the

limb earlier, the ligamentous union will become elongated, so that the interval between the two fragments will thus be increased.

[Mr. Lawrence here presented the following specimens.—1st, The patella, with the superior and inferior fragments united by a ligamentous substance. 2dly, A specimen which was sawn through, presenting a view in profile; the broken fragments being here also joined by a ligamentous substance. The third specimen, Mr. Lawrence said, was not meant to illustrate the goodness of the surgery which had been employed, for there was an interval of four inches between the fragments of the bone, which were only connected by a thin ligamentous texture.]

The strength, therefore, of the ligamentous medium which joins the two portions of the fractured bone, depends a good deal upon the degree of approximation between the two fragments. When these are only separated about an inch, we may say that they will be united by a very firm ligamentous substance, and that the patient will recover nearly the complete use of the knee, and of the extensor muscles; but when you come to extend the interval between the parts, you have so thin a ligamentous stratum uniting the two points of the bone, and the power of the extensor muscles of the knee is so much diminished, by the unnatural state into which they are thrown, that the command over the knee joint is very much reduced, and the patient is, in fact, crippled for life. The circumstance of the fracture of the patella not uniting by bone, seems to arise simply from the two fragments not being brought closely together. I fancy that there is nothing in the situation of the patella or its structure, that would render bony union impossible. The only peculiarity that I can observe here is, that we do not generally succeed in bringing the broken extremities of the bone into actual contact; and in fact, to shew that bony union may really occur, it is only necessary to mention, that in some rare instances the patella has been united by bone. There is an instance of that sort mentioned by Boyer; in fact, in a work that I have here, there is a representation of a patella that was united by bone.

[Mr. Lawrence then exhibited a plate which shewed a part of the fracture, where the anterior surface of the bone was nearly complete; but the length of the patella, measuring from the superior to the inferior edge, exceeded that of the opposite patella by half an inch; so that though bony union took place, there was really an elongation of the bone.]

Some two or three instances are recorded in which bony union has occurred. I may observe, however, that when the patella is fractured longitudinally, under such circum-



stances there is no separation of the fractured portions, and then they are united by bone.

Now as the patella forms a portion of the knee joint, you will not be surprised at finding, that when it is broken, a considerable degree of inflammatory action is experienced in the joint—that it generally becomes swelled and hot—that effusion takes place from the inflamed synovial membrane. You are not to place the joint in the situation which it is permanently to occupy during the cure, until you have removed the state of inflammation. You should, therefore, in the first instance, keeping it in an extended position, apply leeches if necessary, cold applications, and other means. You may find it necessary to continue these for two, three, or more days, before you apply such bandage or apparatus as you deem expedient.

In other kinds of fracture, the injury which the joint experiences in other respects, the inflammation which this excites, and the possibility or probability of the ultimate effects of the injury, are circumstances of more consequence than the state of the bone. The first point, therefore, in cases of this kind, is to adopt all the means that are necessary in serious wounds of an important joint.

If there be *comminuted fracture* of the patella, and it should have an external communication so as to render it a compound fracture, of course it is a very serious case; a penetrating wound of the knee joint, or any great articulation, is at all times serious, and the case is not rendered less so by a comminuted fracture of the bone. It has sometimes been supposed that a fracture of this kind would be a proper case for immediate amputation, but it is not to be regarded in that light. It is certainly a serious injury, and may be a case for amputation, but there are instances where a compound fracture of the patella has been cured without resorting to amputation, though it has left the joint stiff. If the inflammation should subside—if a certain portion of the patella should come away from the wound—if no other effect is produced than a simple ankylosis of the joint, the patient may think that he comes off very well. There was a patient in this hospital who had an accident of this sort that terminated in this way, and he has now such a knee as enables him to go about, and he is able to use the limb tolerably well.

#### *Fractures of the Leg.*

In fracture of the *leg* we may have the two bones broken together, or they may be broken separately. The most frequent case, perhaps, is the fracture of the two bones together, when, in addition to the irregularity in the bones themselves, there will of course be more or less change of figure and deformity of the limb.

When the two bones are broken together,

it does not follow that they should be broken at the same time. The tibia sustains the weight of the body, the fibula has nothing to do with it; in these accidents, therefore, the tibia breaks first, and if the patient continue to move upon the limb, or is not aware of the accident, it is possible that the fibula may be broken in the movements that take place after the fracture of the tibia. It will break at the weakest part: it does not follow that it should break at the place where the fracture takes place in the tibia.—[Mr. Lawrence here presented several specimens. One was an example in which the tibia and the fibula had been broken; the tibia had been broken at the lower third, about three inches above the ankle; and the fibula had been broken about two inches below the knee. Another was a specimen where both bones had been broken exactly in the same situation.]

The *tibia* may be broken transversely or obliquely; it may be broken at different parts, that is, it may be comminuted; and the fracture may be simple, or it may be compound. In the case of transverse fracture we do not find any displacement of the broken ends, more particularly if fracture take place towards the upper part, in the neighbourhood of the knee joint, where the bone expands in size, and of course the fractured surfaces are larger. These fractures are, however, frequently in some measure serious, in consequence of the probability of the injury extending to the knee joint, which it does in many cases. When the fracture is oblique, it usually slants from above downwards, and at the same time from without or behind, inwards or forwards. That is the direction in which the obliquity is observed; so that when the fractured extremities are displaced, which they often are to a considerable extent, the sharp end of the superior fragment presses against the integument that covers the shin, and either projects or actually passes through, and converts the simple into a compound fracture. In the case of compound fracture, there is much disposition to displacement from the action of the muscles, particularly those of the calf,—and when the tibia breaks obliquely, the fibula being broken at the same time, it is difficult entirely to remedy this displacement. The strong muscles of the calf acting on the os calcis, tend to draw the foot upwards, and produce displacement; the lower fragment of the bone comes behind the upper one in such a way as to occasion the two fractured parts to form an angular projection, the convexity being forwards.

The mode of *treatment* which is usually adopted in fractures of the leg, is that in which the leg and foot are laid on their outside, with the knee in a half-bent position. This is, in fact, the attitude of the limb recommended by Mr. Pott, and the ob-

ections which I made to the bent position of the limb in fracture of the thigh, in which the limb is laid on the outside, do not apply to the same position in fracture of the leg. This bent position of the leg relaxes the great muscles of the calf, which come from the back of the femur, and these, perhaps, are the muscles that have the greatest power in displacing the fracture. I think you will find that position of the limb to be the most convenient: the other side rests on a broad splint nearly flat, which reaches from the knee down to the foot, and which has a foot-piece connected with it; and there is another splint extending from the inner condyle of the femur to the inner edge of the foot. The splints are padded, and the fractured part is covered with soap plaister, and the limb is enveloped in a many-tailed bandage.

If the tibia alone is broken, the fibula remaining entire, you can easily conceive that there will be no material displacement of the fracture; therefore the position that I have just mentioned, and the apparatus alluded to, will answer for such an accident.

The fibula is not uncommonly broken *alone* without the tibia participating in the fracture. This may happen either in consequence of some violence applied to the fibula, that is, some blow upon the part which is fractured, or it may happen from a twist or dislocation of the foot. In the former case, that is, if the fibula be broken by direct violence, there is no displacement of the foot. Sometimes there is a difficulty in discovering a fracture of the fibula, for the bone is so covered by muscles that we cannot feel a crepitus, nor can we trace the outline of the bone, particularly of a strong individual. But the patient having met with an accident—having, perhaps, experienced a kind of snap or giving way in the leg—an inability to use the limb afterwards, and particular pain on pressure upon some point,—these are the circumstances upon which our judgment must be founded in cases of fracture of the nature that I am speaking of. But if we are not able to determine the point, it is proper to treat the patient as if the fibula were fractured, and to let him go through the same process as we should for fracture of that bone.

The fibula may be fractured from dislocation or twist outwards or inwards of the foot. The lower extremity of the fibula, which constitutes the external malleolus, is applied to a considerable portion of the astragalus. Now if the foot is powerfully twisted outwards, you will observe that great force must be applied to the extremity of the fibula, and you will not wonder that it should be broken towards the lower part. If the foot is twisted inwards, a similar accident may occur; the ligament which connects it with the os calcis is forcibly drawn inwards, and thus it will happen that the fibula may be broken two or

three inches above the ankle joint, not in consequence of force applied directly to the part, but in consequence of a twist of the foot inwards or outwards. In this case you have the fracture of the fibula, with some more or less considerable displacement inwards or outwards of the foot. This is a kind of fracture that happens to the lower part of the fibula, where it is covered by a little more than a thin integument, and where you can detect it more easily. The lower end of the fibula is more moveable under such circumstances; you can, by pressure, approximate it to the tibia: perhaps by placing the hand over the parts you can detect a crepitus.

When the fibula is broken in that way, you may place the patient in the attitude that I have mentioned; but if it be twisted inwards or outwards, it may be necessary that you should enclose the foot as well as the leg by splints properly placed on the inside of the limb, as well as the outside, and by a foot-piece; by means of which the foot can be kept in a proper position with respect to the bones of the leg. You judge of this by the relation which the great toe bears to the patella: when the great toe is in a straight line with the inner edge of the patella, then the foot is in a proper relative position. At all events, by this mode of proceeding, or other mechanical contrivances, you must, where the lower part of the fibula is fractured, attend to the state of the foot.

With respect to *compound fracture* of the leg, which is the most frequent compound fracture that we have to treat, the general observations that I made to you respecting the treatment of these accidents, are particularly applicable; I, therefore, need not go over the ground again minutely. In the first instance you must place the limb upon a level surface and upon a soft cushion, and adopt the means that are necessary for removing the inflammation, without thinking of confining it with any bandage or splints; and, perhaps, for some length of time after the occurrence of the accident, you find that the straight position, on a level surface, supported by pads, will be much easier to the patient—much more likely to promote the cure, than any application of splints.

The mode of managing these fractures that I have now mentioned to you, provides only for the confinement of the leg and foot, and it may be said, in order to maintain the extremities of the broken bone in their proper position, and at the same time to keep them quite immoveable, the knee also should be subjected to confinement. Mr. Amesbury, whose observations on Fractures I have had occasion to quote to you many times, has a plan for the treatment of fractures of the leg, and also fractures of the lower third of the thigh, in which the apparatus embraces both the thigh, leg, and indeed the foot, so that the

whole of the lower extremity is rendered nearly immovable. He represents that when fractures are treated in this way, the patient is enabled, at an early period after the accident, to move the limb himself—to change its position, sometimes putting it on the side, and sometimes in the straight position; and that even at a comparatively early period he can quit his bed, and walk about, not bearing upon the limb, and not using it by any exertion of its own muscles, but by means of a sling suspended round his neck, by which the whole limb is moved together. Whether this mode of treating such fractures be really preferable to the ordinary one, must be determined by experience, and, perhaps, the comparative results have not yet been sufficient to settle the point.

It is not easy always to keep the extremities of the bone in apposition, so as to produce an union that shall be free from all deformity: you may collect this from the several specimens that are now before us.

[Mr. Lawrence then presented, first, a fracture of the leg toward the lower part of the superior third, where, although the broken bones were not materially displaced, there was a considerable irregularity in the union. Secondly, a fracture a little above the ankle joint, where there was a degree of displacement so that the lower extremity of the leg appeared a good deal deformed, yet the union was sound, and no doubt answered all the necessary purposes. Thirdly, one of those fractures that are considered the most favourable for union, that is, a transverse fracture, yet the limb was not quite straight. Fourthly, a fracture in the oblique direction, in which there was enough of irregularity to have been visible on the surface, but the general line of the bone was not much interrupted.]

I should mention that when fracture occurs in the lower part of the tibia, near the ankle joint, it not uncommonly happens that the fracture extends to the articulation; it is by no means unfrequent to have the external or the internal malleolus broken off, in which case the fracture must extend to the joint. These accidents, if not accompanied by an external wound, are not of great importance; they may occasion a degree of swelling in the joint, which renders it necessary to use leeches, cold lotions, and other means, to check the inflammation; but the cases go on nearly as well, except in as far as these means are requisite, as ordinary fractures would do.

There is one point that I have not adverted to, respecting fractures of the leg, and it is one of some consequence. The three large arteries which run along the leg, the anterior tibial, the posterior tibial, and the peroneal artery, run all three so closely in contact with the bones of the leg—run so near, that certainly they are very liable to injury in cases of fracture of the leg; and the complication

of a wound of one of these vessels adds very much to the difficulty and seriousness of the fracture. You, perhaps, may not be aware of the occurrence of any injury of the vessels immediately after the accident, but you have hæmorrhage coming on at some distance of time.

I remember the case of a man about forty-five years of age, who was brought to this hospital, and came under my care, in consequence of a fracture a little below the middle of the leg, produced by a heavy piece of timber falling on the limb, that caused a comminuted fracture—that is, the bone was broken in more places than one. The limb was placed straight in a fracture box, and it was necessary to apply leeches frequently; and under the employment of leeches and other suitable means, the case was proceeding favourably. I believe he came to the hospital on the 10th of September, 1825, and on the 19th of the same month one pretty considerable fragment of bone was so far loosened that it was removed; it was about an inch in length, and embraced a part of the whole thickness of the tibia. On the 23d another considerable fragment of bone was removed, so as to shew that the fracture was a serious one. I think it was on the 28th September—that is, more than a fortnight after the accident occurred, and when the case was going on well, that it was found in the morning that the patient had experienced considerable loss of blood during the night; more than a pound of blood was found in the fracture box. When the house surgeon saw him, and had removed the blood, he examined the wound with a probe; he found a sinus extending in a particular direction, which he divided. After doing this the hæmorrhage was renewed, and he again lost a considerable quantity of arterial blood, which seemed to arise from the depth of the wound, which was seated on the anterior part of the tibia. When the limb was exposed and laid open to the air, and cold applied to it, the hæmorrhage ceased. This occurred on the 28th September, and on the 3d, 4th, and 5th October he had a recurrence of hæmorrhage, not to a great extent, but decidedly arterial; and having consulted with my colleagues on the subject, we determined that it was a case in which amputation ought to be performed. I should observe that we had previously carefully examined the state of pulsation in the arteries, below the situation of the injury, and we had found that the anterior tibial artery pulsated very strongly on the back of the foot, so that we concluded that the hæmorrhage proceeded from one of the posterior arteries of the leg, and therefore did not think of making any attempt at securing the anterior tibial artery. I removed the limb of this poor man below the knee, and afterwards examined it, and found, contrary to the opinion we had formed, that the anterior tibial was the source of the hæmorrhage. The



artery was stretched over the sharp edge of the broken bone, and had ulcerated at this point, and presented a ragged aperture, about enough to admit the large end of a probe; and no doubt it was from that the hæmorrhage proceeded. All the three arteries presented considerable change of structure; the internal coats were more or less beset, in their whole length, by thin plates of osseous substance, so that on cutting through the coats, they crackled throughout; and this is by no means uncommon in the arteries of elderly persons.

I remember another instance of a gentleman who met with a simple fracture of the leg. He was thrown off his horse. The bone was broken, and some considerable bruises inflicted on the limb. It was necessary to bleed him, and to apply leeches in considerable number, and to adopt other means, to check the inflammatory action.—In spite of these means, however, the limb continued swelled, and a good deal of excitement was kept up in the system, though the means of depletion had gone as far as it was deemed expedient to carry them. On examining the limb, I thought that I felt fluctuation, or softness, at one part, so as to lead me to the idea that there might be blood effused, or possibly matter had formed in the limb, and I made a puncture deep in the situation where I felt the fluctuation; but instead of matter there was a pretty considerable escape of arterial blood, that stopped after a certain time, but was again renewed, and the blood spurted out just as it might do from a wounded artery. I requested that the opinion of another surgeon might be taken in this case as to the course that it was necessary to pursue, being myself of opinion, from all I had seen, that amputation of the limb might be required. Some little delay occurred before the surgeon whom the individual wished to see could be procured; in the meantime the limb was laid open, and cold applied. There was no bleeding then, nor indeed had there been any from the time that I determined on the consultation, so that it was agreed the case should stand over, without coming to any decisive determination on the question of amputation. In that case the swelling subsided, the state of excitement about the limb went off, and there was no necessity for amputation, although it was pretty clear that some considerable vessel had been wounded.

In the *foot*, the bones are so little liable to individual fracture, that we have not much to say respecting this part of the subject. The *os calcis*, however, projects so much from the rest of the foot, and is so much in the way of external violence, that it may be broken. I fancy, however, that the accident is an uncommon one, at least it has only happened to me to have seen one instance of it, and that was the case of a gentleman who was

coming on the outside of a stage coach down Holborn hill: the horses took fright, or he took fright—one or other—and he thought himself in some danger, and he took it in his head to jump off the top of the coach, and lighted on his heels upon the pavement. He was rather a heavy person, and the consequence was he fractured the *os calcis*, breaking the posterior projection of the bone, which was drawn up by the muscles of the calf of the leg, so as to produce a considerable displacement. There was an obvious inequality, that rendered the nature of the accident perfectly clear; and when the knee was bent, and the foot extended, so as to relax the muscles of the calf, a crepitus could be distinctly felt between the broken fragments of the bone. This case did well. The foot was kept straight, and the knee bent, so as to relax the muscles as much as possible. The limb was kept in this position, and after the lapse of a considerable period the gentleman recovered the use of it, though for some time he had something of a halting or limping gait. I think we have got here a singular example of fracture of the *os calcis*.

[Mr. Lawrence then presented the specimen, and pointed out that the *os calcis* was broken—but not completely through, near the attachment of the *tendo achillis*.]

The other bones of the *tarsus* cannot be broken, except in consequence of an accident of a serious kind, attended with considerable crushing of the bones of the foot.

If the *metatarsus*, or the toes, are broken, the nature of the accident will be sufficiently obvious, and the mode of proceeding very simple.

#### LECTURE LIII.

##### Recapitulation—Inflammation of Bone—Caries—Necrosis.

IN speaking to you, gentlemen, of fracture of the neck of the thigh bone, I mentioned it as an accident incident to persons advanced in years, stating that it was seldom seen in young persons, and that it most frequently took place in those who had passed the age of fifty. Now you will readily understand, that although the accident happens most frequently at the age I have mentioned to you, that there is nothing in the nature of the occurrence that should prevent it from taking place at an earlier period of life. Indeed, I had occasion to mention an instance, and shewed you a drawing of a bone, in which it had taken place between the ages of forty and fifty; and the specimen which is now before us is one of the thigh bone of a much younger subject, in whom the fracture had taken place in consequence of a violent in-

jury inflicted in the situation of the trochanter major; and it appears clear, from an examination of the specimen, that the fracture had taken place within the capsular ligament of the joint. The age of the subject in whom it occurred may be pretty accurately ascertained, by observing, that the back of the trochanter major, and the head of the bone, are still in the state of epiphysis—not consolidated to the body of the bone.

Now, in this case, you will observe what I had occasion to point out before, that the neck of the bone has undergone a very great diminution in its length—in fact, that it is almost completely destroyed, so that at present the superior convexity of the head is about on a level with the upper point of the trochanter major, shewing, that whatever might have been the nature of the accident, the limb would have undergone a considerable degree of shortening, because, ordinarily, the head of the thigh bone projects considerably above the upper extremity of the trochanter major. This specimen, too, has been taken out at a period very recent, in respect to the occurrence of the accident, which happened only a few weeks since.—What is farther interesting in this specimen, is the very considerable progress that has already been made towards the consolidation of the fracture. Although the fracture had taken place decidedly within the capsular ligament of the joint, no reasonable doubt can be entertained that in this instance, in a short period of time, the fracture would have been consolidated by bony union. The line of the fracture is very obvious; it is seen within the attachment of the orbicular ligament, and already a pretty firm union has taken place between the broken neck and the body of the bone. Although the consolidation is not osseous, it is so firm that the ends are not easily moved upon each other. You observe the diminution, the absorption, or the disappearance of the neck of the bone. It is a very interesting specimen, both on account of the period of life at which the accident took place—on account of the fracture having clearly occurred within the attachment of the capsular ligament of the joint—and on account of the very considerable progress which has taken place towards the osseous consolidation of the injury.

#### *Inflammation of Bone.*

The same organization which enables bones to repair the effects of injury, renders them liable to inflammation, and the various changes which are consequent on that process. Inflammation of a bone may arise from *external* causes—that is, from accidental injury, such as a blow; or from *internal* causes, such as a scrofulous disposition in the system, or from the influence which venereal poison exerts on the system. We know

but little of the changes which inflammation produces on the osseous structure during the period of its activity; that is a part of the pathology of the osseous system, which hitherto has been only imperfectly investigated, and on which I have really no clear and distinct information to afford you. You will find sometimes that the vessels of the bone are apparently distended—that is, are more full, and apparently more numerous than usual; and we see them filled with red blood. Although we do not know much of the alteration which the osseous structure undergoes during the active period of the inflammation, we can observe very clearly the effects which the inflammation produces; and these effects are analogous to the consequences of inflammation occurring in the soft structures of the body. Inflammation of a bone causes enlargement, from interstitial deposition, suppuration, and the formation of matter, and ulceration, which, in the case of the bone, is termed *caries*—mortification to which, in the case of osseous structure, there is also a particular term given, *necrosis*.

Inflammation in the bones, as in the soft parts of the body, may be either *acute* or *chronic*. It may vary considerably in degree. Enlargement from interstitial deposition and ulceration, or caries, proceed from what we should call chronic inflammation of the bone; while suppuration and necrosis are referable to acute inflammation.

Chronic inflammation of a bone is not very easily distinguished from a similar affection taking place in the fibrous membrane which covers it—that is, the periosteum; and no doubt, in many cases, the bone and its fibrous investment equally partake of the inflammatory affection. You may, however, have the bone alone, or the periosteum alone, inflamed. When inflammation affects the osseous structure only, and is of a chronic character, the enlargement which it produces is extremely slow in its progress; the tumefaction of the part is of unyielding and incompressible hardness; the pain, generally speaking, is inconsiderable, and there is very little sympathetic effect produced on other parts of the economy; so that the diseased process seems confined, in its operation, simply to that part which it affects.

As to the result of this process when it has been long continued, we find a general enlargement, a greater than natural solidity of structure, either in the bone altogether, or that particular region of it which has been the seat of inflammation. We find a condition of the bone in which, perhaps, the external figure is considerably altered; and this is sometimes called *exostosis*, but improperly so; for exostosis is a tumor produced upon a bone, but this is a general change, either of the bone at large, or of a certain portion of it; and if we are to designate it by

a particular term, I think it better to adopt that of *hyperostosis*.

[Mr. Lawrence shewed an example of this affection; it was the tibia much increased in solidity, and the external figure was altered; but there was no tumor, nor any part to which the name of exostosis could be given. Mr. Lawrence also exhibited the femur of the same person, sawn through, in which there was a great thickening of its walls.]

#### *Periostitis.*

The periosteum, or fibrous membrane which covers the bone, is equally, if not more, liable to inflammation than the bone itself. Inflammation, when it affects the periosteum, is termed *periostitis*; by some old writers it is termed *gumma*. Contrasted with inflammation affecting the osseous structure, periostitis shews great rapidity in its development; the inflammatory tumor, too, takes place much quicker; it is seated upon the bone, and apparently inseparably connected with it; it appears like a swelling of the bone, so far as the external character goes, but at the same time there is a degree of elasticity, and if you come to press it with the finger pretty firmly, you will not have the same incompressible and resisting hardness which characterizes enlargement of the bone itself. The inflammation is usually more active, so that, if the bone be superficially seated, it is frequently communicated to the surrounding parts, and will produce a degree of redness, or discolouration, on the external surface. The pain is very considerable; for this membrane being fibrous, it does not easily give way to inflammatory distention. There is considerable sympathetic influence produced on the circulating and digestive systems; more or less of general disturbance. Inflammation of the periosteum produces enlargement of the membrane by interstitial deposition; or it may proceed farther, and terminate in suppuration; and we generally find that the matter produced under such circumstances is situated between the inflamed membrane and the surface of the bone.

Inflammation of the bone must be treated, during the inflammatory period of the affection, by antiphlogistic means, the abstraction of blood from the part, and other measures of the same character; and when the active period has passed by, counter-irritation, such as the formation of a seton or issue, or the application of moxa, should be resorted to. Inflammation of the periosteum must be treated upon the same principles. In the inflammatory period of the affection you must employ pretty active local antiphlogistic treatment—that is, you must apply leeches to the part; you may relieve the pain which the tension of the inflamed membrane produces, by fomentations and poultices. But you often find, that the first employment of means of this character does not

succeed in putting a stop to the affection, or in relieving the patient from the very severe suffering which an attack of acute periosteal inflammation will produce; and you find it necessary to have recourse to the employment of mercury. You will generally find, under such circumstances, that the use of mercury, carried to such an extent as to affect the system (and you will sometimes find it necessary to produce a pretty free salivation), will effectually relieve the symptoms when the application of leeches, and other antiphlogistic treatment, has failed to produce the effect.

I have so frequently seen this in cases of inflammation of the periosteum, and I have seen so many instances where the disease has continued unrelieved, in spite of the pretty active employment of antiphlogistic means—in spite of the mild employment of mercurial treatment, where, notwithstanding, it has yielded to the full influence of mercury on the system, that I own myself to be at a considerable loss to account for the opinion entertained by many, that inflammation of the periosteum, and affections of the bones, are actually brought on by the use of mercury. It seems to me very inconsistent, that one and the same remedy should be capable of decidedly relieving inflammation of a certain texture, and that when we employ it for other purposes, it should produce inflammation of that very part. I think I before had occasion to mention to you, in speaking of these symptoms as consequent on that state of the system which is occasioned by syphilis, that I could not coincide in the opinion entertained by many, that these symptoms were produced by mercury; and certainly, whether we speak of inflammation of the periosteum as arising from syphilitic disease, or not, I do not know any means so effectual for relieving the disorder as the free exhibition of mercury.

I have mentioned to you, that inflammation of the periosteum frequently proceeds to suppuration,—that matter is formed. We find under such circumstances, in many cases, that very severe suffering attends the formation of matter in this membrane; which we can readily understand when we consider the unyielding nature of the texture in which inflammation and suppuration take place. This suffering will be more particularly severe when it occurs in a part of the body where the determination of blood in other respects may be apt to produce considerable uneasiness; that is, when the periosteum covering the bones of the cranium is the seat of the affection. I have seen instances where a small formation of matter has taken place in the periosteum of the forehead, producing a great degree of pain in the head, total restlessness, want of sleep, great disturbance of the circulating system, a full, hard pulse, white tongue; in fact, a degree of general febrile disturbance, which you would



suppose must have owed its origin to some serious disturbance in the system generally. When treated first by free depletion, and subsequently by the administration of calomel and opium, and then by making a division of the inflamed parts down to the bone, although a small quantity only of matter may have been discharged, all those local and general symptoms have been immediately removed. In such a case, where there is considerable local pain, with other indications of inflammation and matter in the periosteum, where these constitutional effects are produced by local suppuration, the effectual mode of relief is by freely dividing the inflamed parts, and freely evacuating the matter deposited. You generally find this will put a sudden and complete stop to the symptoms; and perhaps the surface thus exposed will heal up without any farther trouble.

The pain connected with the inflammation and enlargement of the periosteum sometimes goes on in spite of all the means that we can adopt for their relief; and we are led at last, from the failure of such means, to try the effect of complete division of the inflamed part, without considering whether matter is formed in it or not. We are led to make a division through the inflamed periosteum down to the bone, in order to relieve the tension of the fibrous structures which are involved in the inflammation; and in many instances the effect of such a division is immediate and complete. You will not understand, from what I have now mentioned, that in every case where the periosteum is inflamed—not even in every case where the inflammation of the periosteum has gone on to the formation of matter, that you must proceed to incision. Frequently, in those inflammations of the periosteum which occur in consequence of syphilitic poison, you will have a formation of matter, and that to a considerable extent, so that a soft fluctuating tumor is formed on the frontal bone, for example; and, under such circumstances, you find that it is not attended with the serious symptoms that I mentioned; and that, under the treatment which is calculated to remove the cause, the collections of matter, though very considerable, and so large that the integuments become raised, and so thin as to lead you to expect that they must necessarily either be opened, or the matter find its way out by the ulceration of the skin, yet that such collections are often completely absorbed without any opening taking place. I have seen repeated instances of considerable collections on the frontal bone thus removed. I remember one case where a large collection took place on the root of the *os sphenoidale*, from some affection of the *os frontis*, where corrosive sublimate was administered in conjunction with *sarsaparilla*:

the whole of the matter contained in the inflamed portion of the periosteum was absorbed, and no opening took place. You are to consider, therefore, that the plan of making an incision through the inflamed periosteum, whether matter is formed or not, is only to be resorted to in failure of other means of relief: it is not to be considered an universally proper mode of treating such affections.

Inflammation of the osseous structure may produce suppuration; and it is said that the formation of matter may occur in the bones either on the external surface, that is, between the bone and the periosteum, or in the compact osseous structure, such as that which constitutes the shafts of the long bones, or in the looser cancellous substance at the articular ends of such bones, or in their medullary cavities. Now the same observations that I made to you relative to bones in a state of inflammation are very applicable here, namely, that we do not know much of the subject; and really we scarcely are aware of those occurrences having taken place, till the limb has been amputated, or we have examined the part after death.

I need not say much with respect to suppuration in the medullary cavity of the bone, as it takes place in a part so obscure—so completely hidden from observation; for the part itself is so covered by osseous structure, and all the surrounding textures, that we can hardly expect to detect it during life. If the formation of matter takes place, of course there must be a violent degree of inflammation of the osseous structure; there will be symptoms of local inflammation, which will lead to the employment of antiphlogistic treatment; but we can hardly know that matter has formed in any part of the texture of a bone till it makes its way externally, and produces changes in other parts.

#### *Caries.*

The term *caries* means rottenness. It is a classical term, and it is applied to the state of a piece of rotten wood, that is by classical authors called a *carious state*. This term has been employed by medical writers very vaguely; and it has been applied indiscriminately to various changes, more or less important, affecting the osseous structure. By those modern writers on surgery who attempt to employ words in a definite sense, *caries* is restricted, and very properly so, to ulceration of a bone. But the term *caries* is not employed in all circumstances under which ulceration takes place in a bone. When a portion of bone dies, the dead part is separated from the sound by a process of ulceration, just as a portion of the soft parts is separated by an ulcerative process, but that process does not come under the denomination of *caries*: ulceration, in fact, in bone, like ulceration in the soft parts,

is various in its nature. No doubt there are various kinds of this process which more exact observation and investigation will enable us to describe at some future period. There is a healthy ulceration, which occurs as a mode of repairing injuries in the soft parts; and there is a similar healthy ulceration taking place in the bones, in order to produce a similar effect; and the healthy kind of ulceration does not go under the term caries, but we apply the term caries to an unhealthy species of ulceration, which is not of a salutary but of a destructive kind, and which, like the morbid ulceration of the soft parts, is preceded by inflammation. The bone first inflames, and then ulcerates, just as in a sore the skin inflames first, and then proceeds to a state of ulceration. This state, too, is accompanied by the formation of matter, in which respect caries, or the ulceration of a bone, is analogous to ulceration of the soft structure of the body. Such, then, is the sense in which we employ the term caries;—it is a morbid ulceration of bone, preceded by inflammation, and attended by the same kind of suppuration or formation of matter.

I have mentioned to you that the word caries has very generally been employed indiscriminately and vaguely; and I therefore think it fit to point out to you certain states of the bone which frequently, in the older writers, come under the denomination of caries, but which I think are improperly included in that term.

In the first place, the death of a bone, partially or generally, which we call *necrosis*, is described under the term caries, but it is a totally different process. In necrosis you have the death of a certain portion of bone, and you have the ulcerative process by which the dead part is separated from the living; but to mortification, or the death of the bone, the term caries is by no means applicable. Then, secondly, caries does not properly include the diminution or the removal of the substance of the bone which takes place in consequence of the pressure of a tumor; for example, of an aneurism. When an aneurism is seated in the arch of the aorta, and advances towards the front of the chest, it produces absorption of the sternum or ribs, in its progress to the surface of the body; and a considerable portion of these bones may be removed. Now we know, for example, that in such aneurisms we occasionally find that the surface of the bone constitutes a part of the sac, in which we see it rough and bare. But you will here observe that there is a removal of the substance of these bones without producing inflammation;—it is a mere removal of the constituent parts of the bone by absorption; so that it is clearly distinct from caries in the more limited and accurate sense. Then again, the bones are liable to organic

change from the development in their structure of cancerous, melanoid, and medullary formations, as well as to what is called osteosarcoma. In these affections the structure of the bone is considerably enlarged, expanded, and then removed at certain parts; but to the state into which it is thus brought the term caries is not properly applied. These, then, are the states of bone which by many writers have been included in the term caries, but to which, as I conceive, the term is not properly applicable.

In considering caries of bone, we have to observe two states—first, the *inflammatory*; and, secondly, the *ulcerative* stage of the affection. In the inflammatory stage there is pain in the part, with swelling and stiffness of that part of the body in which the affected bone is found, the motions of which are either painful or impaired in various degrees. If the bone be superficially seated, we find that after the circumstances that I have now mentioned to you have been present for some little time, the soft parts immediately contiguous participate in the inflammatory affection. Thus a red inflamed tumor occurs, which is firmly and closely connected to the affected bone; the skin becomes red, tense, and shining, and sooner or later matter is formed. If we allow the case to proceed without interfering, the red part points, the skin ulcerates, and a fluid escapes from the opening, the fluid not being a well-formed pus, but in general being thin, and sometimes mixed with blood. In general, if the tumor be seated over a bone which is near the surface, the quantity of fluid that escapes is not considerable. The escape of this matter, whether it takes place spontaneously or be evacuated by a surgical operation, does not lead to the union of the sides of the cavity, and the consolidation of the small abscess that has occurred. On the contrary, the matter continues to flow from the opening, which, instead of closing, throws out a kind of spongy granulation, which bleeds on the application of any slight external force. The edges of the skin generally assume a dark or livid colour, and from the aperture itself, which continues in the form technically called fistula or sinus, a thin fetid matter escapes, which tarnishes silver instruments if brought in contact with it; and the factor of which generally is sufficient to point out that the opening from which the matter proceeds is connected with a diseased bone. Frequently after such inflammation has taken place in one point, similar appearances will take place in other parts; thus various sinuses will be formed, some of which are found extending into each other. When a probe is introduced through the opening, we come to the surface of the bone, which, on examination, is found to be rough and irregular, the osseous substance being denuded. In the case of spongy and

cancellous bones being the subjects of the disease (and they are more liable to it than those which are compact), we find that the bone is much softer—that the probe sometimes sinks and penetrates to some extent into it. At this period of the affection we find the texture much softer than natural—that it is much redder—that there is greater activity in the blood vessels of the part. We sometimes find this change confined simply to the surface of the bone, and sometimes it extends more deeply into its texture. When the complaint has existed for a considerable time, we shall find these alterations will have proceeded almost through the bone, and that a considerable part of the texture has passed through the fistulous opening with the matter, in the form of minute fragments. Sometimes in the neighbourhood of the disease there is an increased deposition—a kind of chrystalline formation of new substance—so that the process is not simply that of removal by ulceration, but there is at the same time an increased deposition in certain parts.

[Mr. Lawrence here presented a specimen, which shewed how the substance of bone might be removed by absorption. It was part of the upper extremity of the tibia and the fibula: about three inches of the tibia had been completely removed by the ulcerative process: there was a large cavity, and nearly the whole of the bone at one part had been removed by the process of ulceration. Mr. Lawrence likewise presented a specimen of caries affecting the lower extremity of the tibia: the surface of the exposed bone was rough and irregular, and there was an ulcerated aperture in the external soft parts.]

Frequently, when the bones of the carpus and the tarsus are the seat of the affection, you will not only observe a considerable removal of the osseous structure, but certain parts of the bone lose their vitality, and are observed to be loose in the cavity, which is seen on such occasions. Certain parts seem to perish by a process like necrosis, while ulcerative absorption is affecting the others.

[Mr. Lawrence presented a specimen where the process was taking place in the carpus.]

The same kind of changes are observed when this disease affects the bodies of the vertebræ. You will see, perhaps, in cases where this affection has produced angular incurvature (that is, a bending forward of the vertebral column), that a considerable part of the substance of the bodies of two, three, or more vertebræ, are removed by absorption. In the kind of cavity thus produced, you will have fragments of osseous substance lying loose, deprived of vitality, in the state of necrosis.

Now after this ulcerative process has produced a more or less considerable loss of substance in the bone, if the causes that have

given rise to it are put a stop to, we shall find that the surface of the bone is capable of throwing out healthy granulations: that the diseased part may be separated, granulations arise from the surface of the bone, and cicatrization may be effected, the integuments under such circumstances being drawn in, and firmly attached to the surface of the affected bone. This is a kind of process which is not unfrequently seen in the case of caries affecting bones of the carpus, or of the tarsus; or of caries affecting some of the spongy or articular ends of bones in scrofulous subjects. If the bone which is diseased be more deeply seated, the progress is somewhat different. When inflammation becomes communicated from the affected bone to the neighbouring soft parts, matter forms and an abscess takes place in the neighbourhood; the matter forming under such circumstances being the result of a species of chronic inflammation, and the abscess having the chronic character. The matter which is thus formed finds its way gradually to the surface, and it often arrives at a point considerably remote from the situation of the local cause which has given rise to its formation. Thus in the caries affecting a part of the vertebral column, the matter that is formed in the neighbourhood of the disease will descend according to its weight, and the facility which the looseness in the cellular texture in any particular situation may give to its progress. Thus it extends itself to the groin, and various other remote situations.

In these cases, the abscess thus formed is either evacuated by the surgeon, or breaks and discharges itself spontaneously, and then the opening from which the matter has flowed becomes, as in other cases, a fistula leading to the diseased bone; and from this aperture a discharge of thin unhealthy matter takes place, in a greater or less quantity. If the disease which has produced the abscess continue, this discharge also continues, and perhaps increases in quantity. If the disease increase, hectic comes on; and thus when an important part of the osseous system is the seat of disease, as a portion of the vertebral column, the case frequently ends fatally. But this is not always the result: if an attack of the affection of the bone should be put a stop to by art, or if it should come to an end in consequence of an improvement in the state of the constitution, the sinuses that have been produced by the formation of matter may close, and the patient recover.

I should observe with respect to this affection, that it may come on in consequence of *external* causes. Accidents, injuries from violent blows, or gun-shot wounds involving a bone, are capable of producing the effect that I have just mentioned—a state of ulceration of the surface, a



loss of substance by the ulcerative process, and a gradual discharge by the external opening of minute fragments of the bony substance. In the same way we find this effect produced in the bones by pressure, in consequence of one position being long maintained, as in a tedious illness. Thus caries of the sacrum, the trochanter, and the crista of the ilium, will arise. Caries of the spongy articular ends of a bone takes place in consequence of ulceration extending to them from the articular cartilages of the joint. These external causes, particularly accidents and injuries, will no doubt be more likely to produce the effect that I am alluding to, when they take place in individuals who, from a peculiarity of constitution, may be considerably predisposed to such an affection: thus a blow on the shin, or any other part, will be likely to lead to an affection of this kind, if it take place in a scrofulous subject. No doubt, in a great majority of instances, carious affections of the bone arise from *internal* causes—from something defective in the state of the constitution of the individual.

There are two states of the constitution which are more particularly liable to this affection,—the condition which we denominate *scrofula*, and the state which is the consequence of infection of *venereal poison*. In respect to the affection of the bones produced by these two conditions of the constitution, we observe a remarkable difference, or rather contrast. The venereal poison affects the compact parts of the bony structure—the more dense or hard portions of it, particularly the tibia; the compact part of the ulna; and the bones of the cranium. When it occurs in scrofulous subjects, the loose or cancellous parts of the bony structure are more particularly the seat of the disease;—the bodies of the vertebræ, for instance, the bones of the carpus and tarsus, the spongy articular extremities of the long bones of the body. The petrous portion of the temporal bone is a part of the osseous structure which, so far as solidity goes, and its being internal in situation, we should suppose likely to escape from an attack of this kind, and yet it is not very unfrequently the seat of an affection of this nature. Here we see a curious example of the tendency of matter to make its way to the surface. If the petrous portion of the temporal bone be the seat of disease, and matter is formed, it makes its way from the base of the skull along the neck, and occasionally finds an external discharge, though in some cases it also extends inwards—it then affects the dura mater, and produces inflammation of the membranes of the brain, and thus terminates fatally.

I remember a case, that was under my care in this hospital, of a young man, apparently of robust constitution, that is, he was stout, rather lusty, florid, and shewed marks

of considerable fulness about the head. He came to the hospital with swelling and great pain about the neck, under which he suffered severely. After much examination, I thought I felt fluctuation, and made an opening near the lower part of the neck to let out the matter, but no matter came out, though I cut deep; but on the following day, matter flowed out abundantly through the opening: it appeared that I had not cut deep enough. This copious discharge of matter relieved him much; in fact, he got well, and went out of the hospital. Not long afterwards he came back again extremely ill; indeed his head was seriously affected; and after he had been a few days in the hospital, under such treatment as his symptoms required, he had an apoplectic attack, in consequence of which he died. I examined him, and found that the petrous portion of the temporal bone was in a carious state; it had produced inflammation of the dura mater, which had terminated fatally; and I traced from this downwards, a continuity of disease to that part of the neck from which the discharge of matter had taken place.

I should mention to you—having enumerated those circumstances which are the more common cause of caries—one which I consider not to be a cause, though it is frequently spoken of as such—that is, the contact of matter, and the corrosive action of the matter produced by an abscess in the neighbourhood of a bone. Now I conceive that the notion, that matter formed in the neighbourhood of a bone, by lodging on the part, will be able to produce the disease which we call caries, has arisen from the misinterpretation of a circumstance often seen. Where chronic abscess has occurred in the loins, there is generally disease of some portion of the lumbar vertebræ; and we sometimes find, on examination after death, that there is a quantity of matter lying about the bone, so that the bone may be said to be bathed in it; but the truth is, the disease in the bone has been the foundation of the affection, and the formation of abscess has been secondary. We know of no instance where matter has been formed in the soft parts, in which it has led to carious disease of the bone; on the contrary, if matter is seated on the exterior of the periosteum, this membrane has rather become thickened, so as to form a kind of protection to the bone.

The *treatment* of caries in the inflammatory stage must be antiphlogistic. You must take blood locally from the situation where the uneasiness is experienced, and adopt other antiphlogistic measures. After this, you will find it necessary to employ counter-irritation, by blisters, tartar emetic ointment, moxa, &c. in the neighbourhood of the diseased bone.

When we come to the *ulcerative* stage of the affection, we must apply counter-irrita-

tion ; and, so far as local means go, there is perhaps no more effectual way. Farther, as local means of treatment, we are sometimes recommended to denude the bone, when the carious affection occupies only a small part of it, and it is within our reach ; and to remove the diseased part by means of such an instrument as Hey's saw, or a stout pair of scissors or pliers—in short, by some mechanical instrument, to cut away that part of the bone which is the seat of disease. On the Continent they are much in the habit of having recourse, for this purpose, to the actual cautery, separating the integuments by a knife in the first instance—getting the bone denuded, and then applying the cautery, at a white heat, to the bone. By this process that part of the bone which was in an ulcerative condition, or a state of caries, is brought into a state of necrosis—that is, is deprived of vitality altogether, and it is then separated in the manner that you are already well acquainted with. In the great majority of instances, the bones that are affected with caries are so situated as to admit of this vigorous kind of treatment ; and perhaps in this country we are too much in the habit of neglecting the use of the cautery, for it is little employed for the purpose I have just mentioned.

The means of treatment that I have now mentioned to you are local ; but I think you would neglect the most important part of the treatment, if you were not to pay attention to the state of the individual in other respects—if you were to confine your attention simply to the local affection of the bone, and not employ those means that are calculated to benefit the constitution at large ; for certainly, in a great majority of instances, caries owes its origin and progress to something unhealthy in the state of the system. You are to give the patient, more particularly if he be weak, sickly, or scrofulous, all the benefit that can be derived from pure air, nutritious diet, exercise, warm clothing, warm bathing, and so forth. In the weakened state of the system in which individuals are found in whom this scrofulous constitution exists, and in whom long-continued illness shall have co-operated with natural debility of constitution, you not only require all the aid which these means afford, but also to give them the further advantage of strengthening courses of medicine ; and I do not know any kind of medicine more advantageous, under such circumstances, than steel. You will, of course, in conjunction with this, or any other kind of treatment, pay attention to the condition of the digestive organs ; and at the same time that you are giving a nutritious, and perhaps a rather copious diet, you take care that the functions of the digestive organs shall be regularly performed.

I should observe, that in cases of caries affecting an important part, such as the

spine, you must not be too much in a hurry to proceed to the employment of those local means that are necessarily attended with considerable irritation ; I allude to setons, issues, and means of that character. In a seton, or issue, you have a constant source of irritation kept up in a certain part, which, indeed, is made by the surgeon himself, but is not the less on that account a source of suffering, and very often a considerable one. I would not wish you to understand, that you are to have recourse to these measures in all cases of caries, even in the spine.—There are many cases of caries in the vertebral column occurring in scrofulous individuals, in whom rest of the body in the horizontal posture, so that the weight of the upper part is taken off the column—residence in pure air, and strengthening medicines, together with attention to the digestive organs, do all that can be accomplished with advantage, and in whom the addition of counter-irritation would, perhaps, rather aggravate the unhealthy state of constitution to which the local affection owes its origin, than be effectual in restraining the local complaint.

#### LECTURE LIV.

##### *Necrosis.—Rachitis.*

THE word *necrosis*, gentlemen, which means simply death of a part, is now usually applied technically to denote death or mortification of a bone. Heretofore, necrosis, as I have already mentioned to you, has been confounded with other affections of the bony structure, under the term *caries*. Necrosis in that form has by some been called *dry caries*. You will understand from the description I have already given you of the latter affection, that there is an essential distinction between the two diseases—that caries, in fact, is ulceration—while necrosis is gangrene or mortification of a bone. Necrosis and exfoliation are not synonymous expressions. When a portion of bone has perished, it is separated by a natural process from the healthy part of the bone, and this under certain states is called *exfoliation* ; so that exfoliation is the separation consequent on the necrosis or death of a bone ; exfoliation, therefore, is a subsequent process, consequent on the previous death of the part.

The compact bony texture—that which constitutes the shaft of the long bones of the body—is the most subject to necrosis ; the cancellous, or spongy structures, are also susceptible of that process, but by no means so frequently. We may see occasionally portions of a bone of the carpus or tarsus, or some part of the ar-

ticular extremity of a long bone, destroyed by the process called necrosis, but such occurrences are much more rare than the death either of a portion or nearly the entire of the shaft of a long bone.

[Mr. Lawrence then exhibited a specimen of necrosis affecting the os calcis; a portion of the bone was completely black.]

In the long bones, and in the compact structure of any bone of the body, you may have either a small part perishing, and then separating, or, in the case of the long bones, you may have the entire shaft of a bone, that is, the portion that intervenes between the two articular extremities perishing altogether, and in this latter case the reproductive power of the osseous system is manifested in a very remarkable point of view; for when the entire shaft of a long bone has perished by necrosis, the formation of new bone takes place—a kind of reproduction of the part that was lost, and, in fact, a process of regeneration occurs, by which a bony substance or mass is produced capable of performing the functions of the original bone.

Necrosis most commonly occurs in young subjects—in children and young persons—and more especially in those of scrofulous diathesis, or in those of naturally weak constitution.

The causes of necrosis are either external or internal. Necrosis may occur, in the first place, in consequence of direct *external* violence, that is, in consequence of a blow or bruise, and in consequence of wounds, particularly such as are attended with a detachment of the periosteum from the bone. In this way we not unfrequently see in compound fracture that the extremities of the fractured bone perish, and are separated before bony union can take place. In the same way, when portions of the bone are considerably separated in comminuted fractures, they perish, and are removed. Fractures produced by gun-shot wounds, in whatever part of the bone they take place, are very liable to be followed by necrosis of the injured parts of the bone, and by their subsequent separation. Then the application to the external surface of the bone, or to the surface of the membrane that covers it, of irritating chemical substances, of an active nature, may produce necrosis. The application of strong acids to the surface of the periosteum will occasion, not merely a detachment of the membranes at that part, but frequently inflammation extending along the bone, which produces necrosis of the shaft of the bone generally.

[Mr. Lawrence then presented a very fine specimen of necrosis in the early stage, affecting the tibia; in this instance it was produced by the application of concentrated nitric acid to a disease on the anterior part of the leg, a disease which, in the first instance, had its origin simply from a slight injury of

the integuments covering the tibia. The sore put on the character of sloughing phagedena, or hospital gangrene, to which, on account of that state, the concentrated acid was applied. The sore was seated towards the anterior part of the leg, and it appears that the acid had affected the periosteum in the situation in which it was applied, and inflammation and necrosis of the entire tibia were the consequence.]

Any cause capable of producing general inflammation and the detachment of the periosteum would, in this way, be adequate to produce necrosis of a bone. Probably an intense application of cold to the surface of a limb might in this way, in individuals of a constitution predisposed to such affections, be sufficient to cause necrosis. Then necrosis may also be produced by any circumstance affecting the medullary part of the bone. This we do not frequently see in the human subject, but in experiments on animals it is found to be the case. If a cylindrical bone be divided, and a wire be passed into the medullary cavity, so as to destroy the medulla and membrane, it will be followed by necrosis of the bone. These, then, are the various external causes, which, by their immediate application, are capable of producing necrosis. It is not very apparent how the *internal causes*, which are concerned in the production of the same affection, operate, though we cannot doubt their efficiency. They consist of those circumstances which give a predisposition to the occurrence of the disease, in consequence of certain external agents applied to the part. The scrofulous constitution, and that state which is produced by the syphilitic virus, these are circumstances which produce a predisposition to necrosis, though we cannot explain exactly the mode in which they act. A small portion of the external surface of the bone may perish in consequence of various external injuries, and may be separated; but of these I have already had occasion to speak when I mentioned the effect of injuries of a bone, and therefore I need not recur to that part of the subject. It is not unlikely that similar injuries, or disease of any kind taking place in the medulla, might produce death of the internal part of the shaft in the same way that detachment or injury of the periosteum produces death of the external part; but we have little opportunity, practically speaking, of observing circumstances of this kind. The most important causes of necrosis, in a practical point of view, are those in which the shafts of the long bones, taken altogether, become affected;—in which they are the seat of violent inflammation, terminating in a detachment of the periosteum, and consequent death of the affected portion.

The mode in which this takes place is seen in experiments on animals. I have mentioned to you, that if a cylindrical bone



be sawn through, and the medullary portion of the bone extensively detached, by thrusting a wire into it, or by the application of acrid or stimulating substances, necrosis is the consequence. Under such circumstances we see that the periosteum becomes detached from the surface of the bone, and we find effused between the detached periosteum and the surface of the bone a kind of gelatinous fluid—a jelly-like substance. The periosteum, which is thus detached, becomes thickened and very vascular, so that when it is injected with size and vermilion, it assumes a deep red colour. The cellular membrane which is seated on the surface of the periosteum undergoes similar changes, becomes thickened, and forms, with the swelled periosteum, a vascular case surrounding the dead part of the bone. This sheath soon begins to assume considerable firmness of texture. In the first place it has a kind of cartilaginous structure—then bone is deposited in it; in fact, it ossifies, and thus an osseous sheath or case is formed, enclosing the necrosed or mortified part of the shaft of the bone. The osseous case which is thus formed is not, in general, quite complete, that is, it does not enclose the whole of the bone. You will see holes or perforations in it, and these holes you will find lead through the osseous sheath into the cavity containing the dead part of the bone.

[Mr. Lawrence then exhibited the following specimens:—1st. A part of the tibia, in which the vacuity to which he alluded was visible, and in the interval there was seen, loose, the dead part of the bone. There were other openings of the same kind. In the second specimen the same intervals were observable, but the case there was imperfect, so that it did not enclose the bone entirely. The third was a more limited specimen of the same kind, where there was only a portion of the bone affected, and there was an irregular deposition of bone all round. 4thly, The disease in the early stage: it was apparent that the dead bone constituted the entire cylinder or shaft of the tibia; and the osseous case that enveloped it was yet very imperfect.]

The osseous case or sheath, which thus contains the mortified portion of bone, is lined internally with a soft, vascular, and red substance, which closely embraces the dead part of the bone, that is, the osseous sheath and the vascular lining, taken together, enclose and embrace the dead portion of bone. If you look at a dried specimen, where the soft parts have been destroyed by maceration, you find that the dead part is loose; but if you examine a specimen in the recent state, you find the cavity lined with vascular substance, which is closely in contact with the dead part of the bone.

[Mr. Lawrence then presented a specimen where the soft parts were preserved, and

where the vascular—osseous sheath, was seen in contact with the dead bone. He also presented a specimen of the tibia divided perpendicularly. One part of the interior resembled ivory, and was thin and white,—this was the diseased portion; and the red, external portion, was the vascular case or sheath surrounding it. It was quite in the early stage of the affection; and on looking at one part of the specimen, the vascular sheath was seen interrupted, so as to render a part of the bone exposed externally.]

Now, the dead portion of bone which is enclosed in the new sheath that I have now described to you, consists merely of the shaft of the bone which is affected; that is, it does not extend so far as to embrace the articular extremities of the bone. I have mentioned to you that necrosis more particularly affects the condensed and compact structures;—but the articular extremities consist of the reticulate or cancellous structure of bone, and therefore the process of necrosis stops short of them. The dead portion of bone, which is called by the term *sequestrum* (or in the plural *sequestra*, when it consists of more than one), becomes detached from the articular extremity by the process of granulation, just in the same way that the exfoliated surface of the bone is separated; so that after a certain time the sequestrum is found loose in the cavity formed by the new case. Then the vascular substance which lines the new case of bone, and which is in contact with the dead part, removes, by the absorbents which it contains, the dead portion of bone; or at least takes away a considerable part of its external surface, so that when the dead portion is taken out from the bony case, you find it has, what we might say in common language, a *worm-eaten* appearance; that is, you see a number of furrows and depressions, with ridges rising between them, and these correspond to the shape of the vascular lining which forms the new case of bone; and the inequalities which are observed on this dead portion of bone or sequestrum are the result of the action of the absorbents. It has been very commonly stated, that the matter or pus which is secreted on the inside of the new bone produces these impressions or marks, and that this kind of action of the matter gradually wears away or destroys the dead bone. We now know, however, that matter possesses no property of this kind,—that pus has no corrosive or solvent influence; and we can have no hesitation in ascribing the appearance to the action of the absorbents seated in the lining of the new bone, which is in contact with the old one. The absorption of the old bone by the lining of the new one may proceed so far as almost entirely to remove the mortified or dead portion: generally, however, this escapes, either wholly or in part, through the openings that I have already mentioned to

you as existing in the new case. This escape of the dead part of the bone, or its removal by the action of the absorbents, is a process which takes up a great length of time, so that many months, or even years, may elapse before, either in one way or the other, the dead portion of bone is got rid of; but if, by the natural process or with the assistance of art, the mortified part is removed, then the new case of bone becomes converted into a solid osseous mass, which completely supplies the place of the old bone. In fact, we may say that the bone, after this process has been gone through, is stronger than it was before, for the newly-deposited bony substance is harder and more dense, and the size of the bone taken altogether is more considerable, because the new case of bone is formed originally round the entire part of the shaft of the old one. Thus the tibia [shewing it] in which the process has taken place, is much larger than the old one; and if you attempt to cut it through with a saw, you find that it is much harder and more compact. The newly-formed bone in this case presents a considerable irregularity on the surface: there is a number of eminences and depressions;—there is an appearance which we might almost call exostosis on the surface; but, in spite of this irregularity, when you come to examine the texture, you find it hard. It has almost a stalactitic appearance, from the numerous elevations which have taken place on the surface.

When the process is completed, the bone which remains behind consists of the articular extremities that belonged to the original bone, and a new shaft, formed in the way that I have just described. The old shaft is destroyed and removed, and you have a new one substituted in its place; but the new shaft of the bone is so insensibly continued into the surface of the old articular extremity, that when you look at the exterior of the bone it appears as if the bone were merely increased in thickness. When you come, however, to make a section of a part that has undergone this affection, you can clearly trace the confines between the old bone and the newly-formed shaft.

Now I have mentioned to you that the bone thus newly formed is capable of answering all the purposes of the original bone. The periosteum retains all the insertions of the muscles and tendons; that is, it maintains all the relations that subsisted between it and the surrounding soft parts, in a natural state; and all these exist equally in the newly-formed osseous shaft; so that when the process has come to an end, the muscles of the limb are capable of acting just in the same way as they did before; the only difference is, that you find a sensible increase in the size of the bone.

Now when you reflect upon the nature of this process, you will immediately perceive

that when it takes place in any long bone of the body, it must be attended with very serious symptoms, both local and general. You have here a state of high inflammation occurring in the very centre of a limb, occupying both the bone and the fibrous membranes which surround it,—parts which, from their dense, unyielding structure, and from the way in which they are surrounded by muscles, tendons, and other parts, are very little susceptible of yielding, and will therefore be likely to produce very serious local disturbance, and a corresponding general sympathetic affection. You will find, in fact, that the local inflammatory symptoms and the general fever are very high in these cases. There is a considerable general tumefaction of the limb, of an inflammatory character. Supposing that the disease is seated in the thigh, for instance, the whole limb is enlarged—there is unnatural heat of the part, a sensation of throbbing, and intense pain. These are the symptoms which characterize the affection locally. The swelling occupies the middle of the limb,—it does not extend to the articulations. The hip-joint and the knee, in such affections of the thigh, are quite free. You have a general tumefaction, with increased heat, throbbing, and violent pain; and when you grasp the part, you are sensible that there is a considerable increase in the size of the bone. With these local symptoms you have high inflammatory fever, want of appetite, a white tongue, thirst, total want of sleep, and very commonly delirium. I have seen an instance of this affection taking place either in the leg or the thigh of a child, where I have considered that the life of the patient has been in danger from the violent nature of the inflammatory fever, the total want of rest, and other circumstances, likely to exhaust the patient.

After a time redness in some part shews itself in one, two, or more situations;—perhaps all the symptoms become increased in intensity; matter forms, and if the case be left to itself, this escapes by a spontaneous opening, and thus affords considerable relief. This, however, does not diminish the general swelling;—matter escapes, but still the tumefaction of the limb remains. The openings through which the matter thus escapes do not heal, but become fistulous. The same kind of fungous, painful, and bleeding granulations, which I have already had occasion to speak of in describing caries, shew themselves at the apertures; and when a probe is introduced, it generally passes down to the dead bone, which you can feel. After a time you will find that matter forms in another situation, and the same process goes on there. Under these circumstances pieces of bone, or the entire shaft of a bone, will present at the openings, and admit of being removed. Or, instead of that, you have

successive collections of matter, occurring at various intervals, and leading, generally speaking, to the formation of permanent fistulous apertures, through which a constant drain takes place. Sometimes one or two of these may close up in consequence of other openings; and in this way the patient may go on for years, without the complaint coming to a termination. It is a fortunate circumstance if, through any accident, the opening is situated near either end of the dead part of the bone, so that the sequestrum presents externally, and admits of being extracted. If we can remove the part of the bone which is dead, we can get rid of the circumstance which leads to the successive formations of matter, and then the case does well.

Not long ago I saw a boy, in whom the shaft of the thigh bone had perished. He had got a number of fistulous openings dispersed in various situations over the thigh. On the second time of seeing him, a portion of dead bone presented itself at the external part of the thigh. I laid hold of it with the forceps, and I found that it was loose. By means of a strong forceps, and some patience, I removed the bone—a piece nearly of five or six inches in length—that is, nearly the whole length of the shaft of the femur. After this, the troublesome symptoms which the patient laboured under almost entirely ceased, though I believe a portion of the dead bone was still left in the case.

The irritation which results from the repeated formations of matter, which are produced by the residence of the dead, or mortified part of the bone, in the new osseous shell, is sometimes so serious, and the patient is so worn out by repeated suppurations, and by the drain which takes place through the fistulous apertures, that we are reduced to the necessity of amputation. It is found necessary, in order to preserve the life of the patient—to remove the limb.

In considering the treatment of necrosis, you have to observe in the first place, that both the local and general symptoms are of a highly inflammatory character, and therefore that antiphlogistic treatment seems to be loudly called for. It is unfortunate, however, that this kind of treatment does not in general succeed in arresting the progress of the affection. It may produce some benefit; and it seems that the free local abstraction of blood by leeches, with fomentations, poulticing, and means of that character, may alleviate the suffering in some degree, but do not put a stop to the progress of the complaint. The greatest benefit that we can produce by surgical treatment, is making a free opening in the early period of the affection, so as to give issue to the matter as soon as it is formed in the neighbourhood of the bone; for you will perceive that great impediment exists in this case to the discharge of the matter by

a natural process. It is confined by the periosteum—by all the thickness of the soft parts that surround the bone, and therefore, instead of coming to the surface of the limb, it extends between the periosteum and the bone (if we do not relieve the patient in the way I have mentioned), so as to detach the periosteum from the whole shaft of the bone. In order to prevent this extension, and in order to give the most early and effectual relief to the patient, we should make an opening down to the bone, as soon as we can satisfy ourselves of the nature of the case; and even if we have some doubt whether matter be formed, it is better to make such an opening. The incision is of no great consequence, even if matter does not escape; but it is of high importance to give issue to the matter as soon as it is formed, not only with a view of relieving the patient from the very serious suffering that attends the affection, but also for the purpose of lessening the extension of mischief which would otherwise take place.

When a free issue has been given to the matter, we sometimes can bring the disease into a quiet state, by keeping the limb at rest, and by counter-irritation, by means of a seton, issue, or the application of moxa—that is, we can place the limb in a state in which the natural process—the formation of new bone and the absorption of the sequestrum—will go on without irritation to the individual.

It often happens, however, that the continuance of this process is attended, in spite of all our care, with repeated formations of matter, which discharge in the way that I have mentioned to you; and there is no mode of putting a stop to this, except that of removing the cause, by taking away the dead part of the bone. Now this can only be done through the medium of a surgical operation, except in those instances in which the bone presents itself externally, and projects—a case which is rather rare. The object of the operation, in these cases, is to denude the dead bone—to expose it, so that we may be able to seize it, and draw it out, or extract it, from the new osseous case; and if we can do this, if we can get away entirely the dead portion of bone, we shall remove the source of irritation, and then the patient will quickly recover. In order to do this, we should select a situation in which the bone is as near as possible to the surface of the body, so that we shall not have much depth of soft parts to divide. We must perform the operation in some situation where, by passing an instrument through the fistulous opening, we can ascertain the certain existence of dead bone, so that we can, by cutting down, come immediately to the affected part. We then make a longitudinal, or perhaps a crucial incision, so as to lay bare a certain portion of bone. Sometimes we can feel the bone at



one or two fistulous openings; and when we come to make an incision, we find these apertures separated from each other by little bridges of new bone, which we can easily cut through, and then we can remove, by various kinds of instruments, any part of the new osseous shell which may prevent us from getting a free exposure of the old bone. We may use for this purpose Hey's saw, or Liston's strong cutting forceps, or a chisel and mallet; and when we get a certain portion of bone denuded, we may employ the forceps, elevator, or other instruments, in order to raise the dead bone out of its bed, and thus to extract it. You will see in the specimens I have shewn you, that the new osseous shell is very imperfect; and you will observe, that if an incision had been made, there would have been no difficulty in getting at the bone. If the dead portion should embrace the whole shaft, we can still remove it, because we can cut the bone in two with a strong pair of cutting forceps, and then extract the two pieces separately. You never find any difficulty, after a certain time, from the connexion of the two bones, because their separation is effected by the process of absorption at an early period; but by this kind of operation you will often abridge the duration of a case, perhaps by many years, and you will very greatly relieve the patient; you will get rid of a source of irritation, which leads to successive suppurations, and which keeps up a number of fistulous openings, which not only prevent the patient from having free use of the limb, but which have a serious influence on his general health.

There are some instances in which, from the deep situation of the bone, as in the thigh, or from our not being able to come on any portion where the bone is denuded and loose, we are unable to afford the patient that relief which the extraction is capable of giving. Here we must be satisfied with the less effectual benefit which counter-irritation may confer—that of seton, issue, or the application of moxa, by means of which kind, although the dead bone still remains in its situation, the parts are kept tolerably quiet.

All the bones of the body are not equally liable to necrosis. I have mentioned to you that the compact parts are the most obnoxious to it, but all of these are not equally subject to it. In respect to the order of frequency, we may say that the tibia exhibits necrosis most commonly. Nearly all the specimens before you illustrating this affection are of the tibia: then comes the femur, then the humerus, then the lower jaw. It is by no means uncommon to have necrosis of the lower jaw, especially in young subjects. You have a considerable part of the jaw, sometimes including perhaps several teeth, undergoing the process of necrosis, and you are surprised to see, when you take out a portion of the jaw, that the various

processes of mastication, &c. seem to be performed as well as they were before; but you will remember that there is a new case of bone by which the lost part is supplied. We do not observe this process of regeneration of a lost part in the case of the broad bones. In order that the process of reproduction should be carried on, it is necessary that the periosteum, although separated from the necrosed part of the bone, should remain entire in its structure. If a certain portion of the shaft of a long bone were destroyed with the periosteum and medulla altogether, you would not have any reproduction. In the case of partial death, or the loss of a portion of any broad bone, it very commonly happens that the investing membrane or periosteum suffers together with the bone, so that the source from whence reproduction is to be expected is destroyed. Hence it happens that the place of dead portions of broad bones is not supplied by the process of regeneration that I have mentioned. In the case of the cranium, which is of the broad bones, the one most frequently exposed to necrosis, I may observe that very commonly the pericranium or external investing membrane suffers with the bone; and the dura mater, which performs the office of the internal periosteum, does not possess the power of contributing to the formation of new bone, which belongs to the periosteum proper; so that when you have removed a part of the cranium by trephining, you do not have a new formation supplying its place, because with the portion that you have removed you have taken away the investing membrane or pericranium.

#### *Rachitis.*

The spine, or back bone, is called in Greek *paxis*, and from that term you have the Latin word *rachitis*, which means, according to the etymological signification, a disease affecting the spine or back bone, and from this term our own English name *rickets* is formed. But by rickets, or rachitis, as we now use it, we do not mean a disease simply affecting the back bone, but we apply it to a disease of the osseous system generally, whether of the spine or other parts in which there is an unnatural softening of the bony substance.

As the bones form the basis of the body—as the general configuration of the limbs and other parts depends upon them—and as they support the weight of the various parts, you will easily understand that when they are preternaturally soft in structure the configuration will be materially altered. Thus curvatures, or various deformities of such parts of the body as are effected by this softening of the bone in rickets, is the most prominent feature in the disease. All bending of the bones, however, is not to be understood as owing its origin to this disease.

We sometimes see the bones of the lower extremity giving way in very strong, stout, and hearty children, when they first begin to walk and go about. Where the upper parts of the body are particularly large, the bones, especially of the legs, seem to bend under their weight.

Under such circumstances, although the children may be completely healthy, parents are often very anxious, and want to know whether they shall employ "irons," and whether the limbs will become straight, or whether the child will remain permanently deformed. In such cases you generally find that the bending of the bones is only temporary. If the children are healthy and stout, if there are no other marks of disease about them, if the bending of the limbs seems to be merely referable to the weight of the upper parts of the body, in proportion as the natural development of the frame proceeds, and as the bone becomes firm, these curvatures will disappear. I have seen children who have had their legs really very considerably bent, in a short time lose all appearance of that deformity, and become quite straight.

In rachitis, or rickets, however, we find a considerable change in the composition of the bones; we find that there is less earthy matter, and a greater proportion of animal substance; indeed we sometimes find that the bones affected with rickets are so soft that they admit of being cut with a knife, nearly like cartilage. This is a subject which has been investigated by Mr. Stanley, who has written a paper on it in the *Medico-Chirurgical Transactions*.

[Mr. Lawrence here presented a specimen, injected by Mr. Stanley.]

When you make a section of a bone of this kind in a recent state, you find a good deal of reddish fluid in its interior, instead of the ordinary substance. You find the shell, or the external wall of the bone, considerably thinner than it ought to be, and altogether so great an admixture of soft animal substance, and so considerable a diminution of earthy matter, that you can really cut the bone very easily. The section of a bone in this state presents an appearance altogether different from that which a healthy bone would exhibit. The effect of this state is, that the bones give way under the weight which they have to support, and the form which they assume generally exhibits an exaggeration of the natural curvature of the bone.

[Mr. Lawrence here presented a specimen of the femur and tibia.] You know that in the natural state the femur is curved forwards, and this is merely an excessive degree of the natural curvature of the bone. It is bent, you see, quite in a semi-circle. The same sort of effect is seen in the tibia—it is bent forwards.

Now I cannot shew you a specimen of this kind in the bones of the upper extremities,

because they have not got any weight to support, so that we have not any curvature of the upper limbs in ricketty persons, and indeed there is a curious, and sometimes almost a ridiculous contrast in the persons of ricketty individuals. You see the lower limbs perhaps not more than half the length they ought to be, and bent in a semi-circular shape, while you have the upper limbs of their natural length, and of their proper proportion. The spine, again, exhibits in a striking degree the effects of this disease;—the weight of the head and the upper extremities bend it in various directions. The neck sinks with the weight of the head, so that this is between the shoulders, and various curvatures take place in different situations. The chest also exhibits considerable deformity in ricketty individuals. The sternum becomes pressed forwards; and the chest is flattened laterally. The sternum presents an unnatural prominence, which puts one in mind of the breast of a bird, and in common language such individuals are said to be *chicken-breasted*, or *pigeon-breasted*, from the prominence which the sternum makes anteriorly.

Now this state of the bones is observed in the early period of the affection. It takes place in young subjects, two or three years of age, or at all events under the period of puberty; and great as this organic change of the bone seems to be, yet it will come to an end naturally; the diseased state will pass off, and a healthy osseous deposition will occur, so as to render the bones, which are thus preternaturally soft, as hard and as sound as if they had never deviated from their healthy state. They do not, however, recover their natural figure: osseous matter is deposited, so as to give the requisite degree of solidity for all the ordinary purposes, but they remain curved, and it is curious enough to observe that the new deposition of osseous matter takes place on the concavity where it would be most aptly placed on mechanical principles to support the weight of the superincumbent parts.

[Mr. Lawrence then exhibited a specimen of the tibia in which this change had taken place.]

Some individuals in whom this reparation takes place may recover the full degree of muscular power, and indeed, in some instances, such persons have become remarkable for their strength. The late Dr. Hunter had the skeleton of a dwarf, a man who gained his livelihood by exhibiting feats of strength, and whose stature was much reduced in consequence of having suffered rickets, particularly in the lower limbs. But the bones of the skeleton were remarkable for their solidity, having almost attained to ivory hardness, and the man was capable of performing great feats of bodily strength.

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## LECTURES ON SURGERY,

*Delivered at St. Bartholomew's Hospital,*

By WILLIAM LAWRENCE, F.R.S.

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### LECTURE LV.

*Rachitis continued—Mollities Ossium—Fragilitas Ossium—Spina Ventosa—Exostosis—Osteo-Sarcoma—Diseases of the Teeth—additional remarks on Necrosis.*

THE chief cause of rickets is to be considered as a natural defect of organization in the individual in whom it occurs; and, in fact, a defect nearly allied to that which I have already described to you in speaking of scrofula. The circumstances which lead to the particular manifestation of disease in the bony structure, are obscure; we are not able to trace them. We can see in those individuals in whom the bones exhibit this form of disease, other evidences of disease. There is usually a degree of flexibility, a looseness of muscular fibre, a paleness of skin, and other marks of general weakness. In such individuals you will easily suppose that the head, the chest, and the abdomen, may become the seat of disorder; and thus, in authors who have written expressly on rickets, we find mention of various diseases occurring in these parts, as if they constituted a part of the rachitis; they are not, however, essentially connected with this disease of the bones. You may have, in certain individuals, such effects occurring without an affection of the internal parts, and you may have the same disorder of the internal organs without an affection of the bones.

The remedies of the disease will of course consist in such means of strengthening the general system as will remedy, in the greatest degree, the original weakness of constitution. In this respect, nearly all the observations which I have made respecting the

treatment of scrofulous individuals, are applicable; a good diet, judiciously regulated; residence in pure air; attention to clothing, particularly warm clothing in the cold season of the year; bathing, and the various means by which an active state of the cutaneous circulation may be kept up. Warm or tepid bathing; sponging the body over with water; and when individuals become stronger, cold bathing, especially in the sea. These are circumstances of great importance in cases of this kind. The medical part of the treatment is perhaps of less importance; indeed, much is not to be accomplished by medicine. The necessity of regulating the condition of the digestive organs is obvious, and aperients may be required for that purpose. Strengthening medicines may be advantageously used in many of these cases, and that which is of the greatest efficacy is steel.

A great question in these cases is the propriety and advantage of employing mechanical means to remedy the deformities which the limbs, or the other parts of the body, are subject to. I should say, in general, that no advantage is to be derived from them, and that in the great majority of instances they are productive of mischief.

If we speak of the period in which the bones are in an unnaturally softened state, and in which symptoms of great debility are apparent, I think the action of mechanical instruments is particularly prejudicial. When nature is exerting herself to repair the effects of this disease, the action of mechanical instruments is superfluous—it is of no advantage. In the case of the spine, or of the chest, the instruments which may give support to the head or to the chest must have a bearing on the pelvis, and must be injurious to that part. I must say, that practically speaking, I have seen in hardly any instance any decided benefit produced by the use of these mechanical means in rickety subjects; and I believe that, in addition to the measures that I have mentioned to you which are cal-



culated to strengthen the general system, you will not be able to employ any local measures with advantage. I should observe to you that during the active period of the disease, and while the bones are yet soft, it is a matter of prudence to relieve them as much as you can from the weight which they have naturally to support. If a child, therefore, have a lower limb beginning to be crooked, you would rather let it exercise itself on the ground, by rolling about on the carpet, or give it passive exercise in the open air in various ways, than allow it to go on its legs. In the same way, if the spine be affected, by allowing a person to remain in a recumbent posture during a part of the day, you take off a portion of the weight which the bones have to support, and which, in their weakened state, they are ill able to bear.

#### *Mollities Ossium.*

The term *mollities ossium* signifies simply *softness of the bones*, and it is equivalent to the Greek word *μαλακοςσεν*. The disease which I just mentioned to you under the name of rickets is in fact a softening of the affected bone—that is, bones affected with rickets are softer in their texture, possess less firmness—less power of resistance, than healthy bones do. However, under the head of *mollities ossium*, an affection is described which is incidental to the adult; while rickets, as I have already mentioned to you, is a disease observed in the early period of life.

The causes and nature of *mollities ossium* are extremely obscure; indeed the affection itself is very rare, and I fancy I may say we possess no means of checking its progress, when it has once commenced. There are a few instances recorded in which the bony structure has not only become very soft, but in which the bones have been really unable to sustain those parts, the weight of which they were naturally destined to support—unable to execute the motions of the limbs—unable even to preserve the natural figure of the parts. In aggravated cases of this kind, the limbs are very much distorted: thus sometimes the thigh is bent directly upwards or forwards in the middle, and the other parts of the body are equally distorted. This affection, when it has taken place, has been preceded by, and accompanied with severe general indisposition. In the commencement of the disease, perhaps, certain bones of the body have been broken by the patient turning in bed, or other slight causes; and as the affection proceeds, that excessive degree of softening which I have mentioned has occurred, and has led to extraordinary deformity in certain parts of the body. In a woman whose case has been recorded, it was found, after a certain time, when she was measured, that she had lost two feet in height in consequence of the shortening

and bending of the bones. When the bones have been examined after death in these cases, they have been found so soft, that they could be easily cut through with a common knife. Perhaps externally there has been a thin crust of bone on the surface, just enough to preserve the figure; but when cut through, the interior part has consisted of an oily, bloody kind of substance;—sometimes either coagulum of blood, or a similar substance, of a livid colour, has occupied the interior of the bone.

In instances of this kind, in which the bones were examined by Dr. Bostock, he found that they contained only one-fifth of their weight of earthy matter; while healthy bones contain two-thirds of solid earthy matter. Such is the affection called *mollities ossium*.

#### *Fragilitas Ossium.*

You will read in books of *fragilitas ossium*—*brittleness of the bones*. If the structure of a bone has been so altered, either in consequence of age, or from change produced by disease, it loses a considerable portion of its earthy ingredients, and these are supplied by others of a softer kind—oily, or other ingredients. Of course the bone will be less capable of resisting external force, and will more easily break—that is, it will be more brittle.

There is no one particular affection to which the name of *fragilitas ossium* can properly be given. In old subjects there is less earthy matter in the bones, and a greater quantity of animal substance—a greater quantity of oily materials than is to be found in the earlier period of life; and thus the bones of old persons break more easily than those of persons in the vigour of life. In the case of cancerous patients, also, as I have already mentioned, there is sometimes a deposition of cancerous structure in the bone, the proper constituents of this having been previously removed. In fungus hæmatodes, and other growths affecting the bone, the earthy part is removed, and in its stead a softish substance is deposited, so that the bone becomes more brittle. Among the causes which are supposed to conduce to this brittleness of the bones, systematic writers enumerate the venereal poison; but I have been inclined to suppose that this has been put down rather at random, never having seen any instance in which the existence of the venereal poison in the constitution appeared to me to have produced any effect of this kind. However, I have been informed within a few days, that a gentleman whom I have often seen, and who, for the space of the last six or seven years, has suffered under constitutional syphilis in various forms, for which he has been obliged to have recourse repeatedly to the use of mercury, and employ it often for long periods of time to

gether—that gentleman lately suffered a fracture of one of his arms under singular circumstances. At one time during his suffering under constitutional syphilis, he was affected with swelling, stiffness, and a considerable want of power in the elbow joint, from which he recovered under the use of mercury, so as to regain complete use of the limb; subsequently he had a considerable swelling of the ulna, and a general tumefaction of that part of the fore-arm for a considerable length of time—sometimes suffering considerable inconvenience, so far as the motion of the limb went, and at other times enjoying tolerable ease from it. I have not seen him for a long time, but the general practitioner whose care he is under informed me, that a few weeks ago, when he was on the top of a coach, going to the country, and had got to some distance from town, he rose in order to throw off a large cloak, and in doing so he felt something give way in the arm which had been affected as I have described. He immediately said “I have broke my arm—I cannot get off the coach without assistance.” The coachman thought he was joking; however it turned out that he could not get down, and when he was assisted, it was found that his arm really was broken. This, I suppose, must be called fracture of the bone, in consequence of some change that depended upon the syphilitic poison; but I have not seen the individual myself—I only know that the bone is broken, and that he is undergoing treatment for the fracture in consequence.

#### *Spina Ventosa.*

There is a strange name sometimes made use of in application to diseases of the bones which I remember having seen, and which has often puzzled me a good deal, and even now I cannot say that I know exactly what the meaning is,—it is *spina ventosa*. It is a word used by the old writers, and if we look to the description they give of the affection, we should infer that they had no clear notion of the disease themselves. It has been described as being an excavation of a bone: it has been supposed to be abscess of a bone; perhaps sometimes cases of necrosis have been described under this term; and among more modern writers the name has sometimes been given to white swellings of the joints. The term “*spina ventosa*,” I believe, is not much used by modern surgeons; and as the particular affection to which the name is given by the old writers is uncertain, we may as well discard the consideration of the subject altogether.

Now you have seen that the bones exhibit affections and powers very similar to those you observe in the soft structures of the body. We have seen that they are capable of repairing the effects of injuries, wounds, fractures, and so forth. We have seen that they

are susceptible of inflammation, and of the various effects which inflammation may lead to, such as an enlargement by interstitial deposition, suppuration, ulceration, mortification. We have also seen, that they are susceptible of other changes of structure—of scrofulous disease, syphilitic disease, rickets, and mollities ossium; and we shall find further evidence of the analogy between bones and soft parts of the body in this respect, that the bones are capable of producing new adventitious growths very similar to the tumors which take place in soft parts. They are capable of producing, either in the interior or on the surface, new formations, varying in consistency, in composition, and in other circumstances. Perhaps there is as much variety in the morbid growths produced in the bones, as in similar productions that take place in the soft textures of the body. Now these tumors arising in the bones pass under the names of *exostosis*, *osteosarcoma*, and *osteosteoma*.

#### *Exostosis.*

*Exostosis* means simply a tumor arising from or seated upon a bone. Under this head are included, not only tumors of an osseous nature,—(for you will naturally suppose, according to the law that has been mentioned, by which new adventitious growths resemble the texture from which they proceed, that the adventitious growth upon a bone should be of a hard and solid consistency,)—*exostosis* then comprises, not only the hard bony growths which rise from the surface of the bone, but it has also commonly included enlargement of the bones, and a general deposition into their texture, as well as other tumors arising from or connected with bones of a softer consistency—those of a sarcomatous kind. I think it will conduce to clearness of description if we restrict the term *exostosis* to growths of a bony character. You will immediately perceive that the general enlargement of a bone by interstitial deposition, must be a thing quite different in its nature from the production of a new tumor, and therefore, that the general enlargement of the bone ought not to be regarded as *exostosis*. You will also find, that there is the greatest difference in respect to the causes, origin, and nature, between the osseous growths that arise upon the surface of a bone, and the sarcomatous enlargement to which the same texture is liable, and therefore we ought to keep these separate, in point of name, from each other. For this reason I think it best, in the observations that I shall have to make to you, to confine the term *exostosis* simply to osseous growths that arise from or upon the surface of a bone.

*Exostosis*, then, is a bony tumor arising from or seated upon the surface of a bone.

*Exostosis* or *node* are by no means synonymous terms. The English word *node* is derived from the Latin word *nodus*, a knot, and means simply swelling upon a part, such as a knot upon a tree or stick: hence a hard tumor, seated upon a bone, has been called a node. Now these swellings upon the bones are, for the most part, enlargements of the periosteum. It may happen that the bone also may be involved, so that when the periosteal swelling has disappeared, some permanent hard tumefaction of the bone may be left behind: but still the simple swelling of the bone is not exostosis, though you find in writers frequently that exostosis is mentioned as one of the results of the venereal disease.

Exostosis has been divided into *true* and *false*. A true exostosis is an osseous tumor arising upon a bone;—false exostosis is any other kind of tumor which is not bony. Exostosis has been divided again into *periosteal* and *medullary*. Periosteal exostosis includes those swellings which arise from the external surface of the bone—the part which is covered by the periosteum, and in the production of which the periosteum has a good deal of concern;—medullary exostosis includes such growths of the bone as derive their origin from the medullary membrane which lines the internal cavity, though it may probably be doubted whether this membrane really gives rise in any instance to exostosis, if we restrict the term exostosis to osseous tumors of the bone. The medullary membrane may give rise, and no doubt does, to certain morbid growths of the nature of tumors, but they are of a soft kind—sarcomatous, or some such description. Again, exostosis has been divided into *cartilaginous* and *fungous*. By cartilaginous exostosis those cases have been denoted which, being in the first instance cartilaginous, ultimately acquire the solidity of bone; such exostosis as that to which I have restricted the term:—fungous exostosis consists of those swellings developed in a bone which are of a fungoid character—*fungus hæmatodes* or *melanosis*; it is, in fact, fungus of a bone, an affection totally unlike exostosis. According to the restricted use of the term that I should propose to you, I should consider only those cases that are denominated periosteal and cartilaginous as being proper exostosis, while the medullary and the fungous kind belong to other heads of disease.

Exostosis consists of a tumor, which in general is more or less irregular on its surface; has a kind of knotty feel, and which is particularly characterized by its hardness: it possesses the hardness of bone, and is completely incompressible and unyielding.

[Mr. Lawrence here presented two specimens of the affection. The first was exostosis of the humerus: it arose into a kind of tuberculated and elevated surface, and was

not uniform, but irregular. The second specimen was an immense exostosis, the whole surface of which was extremely irregular, rising into tubercular masses.]

The irregularity of surface, then, and the bony hardness of the tumor, are two leading sensible characters of the swelling; and a third essential character is, its being immovably connected with the surface of the bone: the basis of the tumor, in fact, originates on the bone, and consequently you cannot move the tumor from it: the tumor seems to be completely identified with the bone on which it is seated.

The base of the tumor is sometimes broad, as broad as the tumor itself; sometimes it is contracted into a kind of pedicle, considerably narrower than the rest of the tumor.

[Mr. Lawrence illustrated this by referring to two specimens before him. One tumor was connected to the bone by a narrow neck, while the other, which was another kind of exostosis, had a base as broad as any part of the exostosis itself.]

The basis of the tumor being connected to the bone, is of course covered by muscles, and lost under them, in those situations where the limb is fleshy, and where there is much muscle and other soft parts. These growths arise imperceptibly, and increase very slowly. Often a number of years elapse without an exostosis acquiring any very considerable magnitude; indeed sometimes they are observed in the early period of life, and do not seem to grow more than in proportion to the general growth of the body. In many instances they acquire a certain magnitude, and then remain stationary: they do not increase further. In other instances they continue growing, and their increase is unlimited.

[Mr. Lawrence presented an example of that kind, and said that it was an exostosis surrounding the lower part of the femur:—it had acquired an immense magnitude.]

The tumor is perfectly indolent, unattended with pain; producing no inconvenience, nor uneasiness, unless it should interfere with the functions of any part near which it may happen to be situated. If it be so placed that in the motion or employment of the limb any part is subject to pressure from it, either muscles, tendons, nerves, or any other organ, it may cause more or less disturbance; but, independently of such causes, it gives no pain, and produces no inconvenience, to the individual. If an exostosis that grows to a considerable size should be seated near a joint—if it should arise in the interior of a cavity, as in the pelvis or the antrum, it is more important, and in the orbits a small exostosis will produce serious symptoms. An exostosis arising on any part of the interior of the skull, may prove a very serious disease.

All bones of the body are liable to ex-



ostosis, but some bones are more so than others;—perhaps the femur is one of the most liable, the humerus comes next, then the lower jaw, and then the cranium.

[Mr. Lawrence presented a specimen of exostosis of the fibula; a number of growths had arisen from the surface of the bone in various parts;—two specimens of exostosis of the femur—one arising from the trochanter minor, and one situated about the middle of the os femoris; there were also two of the humerus.]

I do not see here any specimens of that exostosis which is, perhaps, the most frequent, of the femur—that is, one that takes place just at the attachment of the tendon of the great head of the triceps, on the inside of the thigh.

The causes of exostosis are very obscure. In some instances they seem to be congenital—that is, tumors of this kind are seen at so early an age, that one supposes they existed at the time of birth. In other instances they come on in healthy persons quite imperceptibly, without any obvious exciting cause. There are some cases in which a predisposition exists in the frame to the formation of bony tumors, particularly in young subjects. Thus you will see occasionally in an individual, eight, ten, or a dozen such growths on various parts of the body—the tibia, the humerus, the scapula, the femur, the cranium—without our being able to detect the particular circumstance that gives rise to them. The texture of these growths, although we call them all bony, is different. In general you observe that the same law takes place in respect to these morbid osseous productions as in the natural bones of the body: they are first cartilaginous and then bony. You sometimes, therefore, find a tumor of exostosis in a young subject, which, when you cut it through, seems to consist of cartilage, but still you find that there are spiculæ of bone running through it in various directions. Sometimes there is a thin osseous shell with a cartilaginous substance in the interior. In other instances, where the tumor has existed a long time, you have osseous substance and cartilage intermixed, in about equal quantities.

[Mr. Lawrence then presented a specimen, in which he said there had been a number of cartilaginous portions, but which had probably been destroyed by maceration.]

Exostosis of this description is covered by periosteum, which is considerably thicker than the natural periosteum of the healthy bone; in fact, not only thicker, but it seems to consist sometimes of a stratum of cartilage. In some instances the bony tumor acquires the firmest bony structure; indeed it gains a sort of ivory hardness, exceeding in density and compactness any natural bony structure of the body. Such tumors have

been observed about the head. There is a small, round, bony tumor which forms on the skull, which is particularly dense and compact in structure, and sometimes acquires very nearly the smooth surface and completely dense structure internally of ivory; and when it has acquired that state it remains stationary, and does not proceed in its growth.

[Mr. Lawrence here presented two specimens, and said, that if they contrasted the solid exostosis with the one that was porous, they would observe that the former was perfectly dense and hard, while the latter was soft; shewing that a great deal of cartilaginous or other soft matter must have been mixed with it.]

I fancy that we have very little power of checking the growth of exostosis, and that we shall entirely fail by using the means that have sometimes been suggested—such as the application of leeches, or cold lotions, or counter-irritatica. I believe these have no power at all in checking the growth of a tumor of this description; but I will not venture to say, that if the growth of the tumor be indicated by some degree of redness and warmth of the part, that such means might not have a certain degree of effect. It has been suggested to administer acids internally, with a view of dissolving the tumor thus formed; and if we could direct these acids so as to melt the new without altering the old bones, it would be all very well, but I believe that no exostosis has been melted away by treatment of this kind.

If the tumor should have become stationary—if it be so situated that it does not interfere with the functions of the part, nor produce any unpleasant appearance or deformity—there is no reason for meddling with it; you may leave it alone. But if it be growing—if it be increasing considerably—if it already produce inconvenience, and if it be likely, by its increase, to become still more inconvenient by interfering with the motion of any part of the body, it then becomes necessary to adopt means for removing it. These tumors may be dealt with very freely: you may saw them off, or cut them off, or employ any other means of that kind for getting rid of them. So far as the mere tumor itself goes, and that part of the bone with which it is immediately connected, all operations of this kind may be undertaken without fear. The only question is, whether the tumor be so situated that you can conveniently expose it for adopting such measures—whether you can lay it bare without injuring parts of consequence? The mode of proceeding, then, in exostosis, consists, in the first place, in making such an external incision as will enable you to dissect away the soft parts and completely to expose the morbid growth, together with

the basis by which it is connected to the surface of the bone. If you can do that, and if it be so situated that you can use a saw of any kind, you may then cut off the tumor at its basis. But when exostosis arises from any part of the femur, which is its common situation, or from the humerus, you probably find that it is so surrounded by muscles and other soft parts that you cannot procure that complete exposure which is necessary for sawing the part off; and then the circumstance that I have mentioned to you, that these growths are partly composed of cartilage or soft substances, will enable you, with a strong knife, more particularly if it have a strong handle, to cut off the tumor from the surface of the bone that gives rise to it. If you can do this, and scrape off all the morbid parts, you find that they will not be reproduced. A chain saw has been proposed for removing these tumors; and also a particular kind of saw which has been invented by a mechanic (Mr. Machell), and which is worked by machinery—an inconvenience, because it requires a considerable space to work in. I believe you will find that a very stout knife will be adequate, in most cases, to detach the exostosis from the bone that gives origin to it; and that either this or a short saw, such as that of Mr. Hey, will answer the purpose very well. When you have completely detached the growth, you will find that the surface of the bone heals, and that the bony structure is not reproduced. In instances in which you may not be able to succeed in doing this, it has been very ingeniously proposed, by Sir Astley Cooper (who has written some observations on exostosis, in a work published by himself) and Mr. Travers, to cut through the periosteal covering, to detach it from the tumor so as to denude it completely, and to leave the new growth, when it has thus been deprived of its nourishment, to perish by exfoliation. In some instances it has been found that the tumor has been gradually lessened, and that it has fallen away, after it has thus been denuded of the periosteum.

Now I have mentioned to you that the tumors which constitute exostoses may be freely dealt with by operation: but you will recollect that they are connected with the shaft of the bone—that they are covered by the periosteum; and of course inflammation may arise in that part, at the seat of operation, and may spread in the interior of the limb throughout its whole extent.

I had occasion to remove an exostosis from a gentleman, which was seated on the inside of the thigh, at the attachment of the tendon of the triceps. After denuding it, and taking away, by a saw and other means, the main bulk of the tumor, the parts were closed, and the ends of the operation seemed very well accomplished. In this case, con-

siderable inflammation came on in the neighbourhood of the wound, and extended over that part of the limb generally, occupying the knee (for the exostosis was not seated far from the knee-joint), producing pain, considerable swelling, stiffness in the limb, and very serious suffering. These symptoms lasted, more or less, with great stiffness of the knee-joint, I think for a period of more than twelve months; not that the gentleman was confined to bed all that time, but he had a swelling, a stiffness, and a weak state of the knee-joint, in consequence of inflammation produced by this operation. The symptoms ultimately went off, however; the growth was completely removed, and there has been no reproduction,—so that he has been free from the inconvenience which the tumor produced.

#### *Osteo-Sarcoma.*

*Osteo-sarcoma* is the generic term that has been applied to tumors of soft consistence, produced in the bones. *Osteo-sarcoma* has been very commonly spoken of as the conversion of part of the bone into a fleshy substance; more properly, it should be described as the development of a fleshy tumor in the structure of the bone. *Osteo-steatoma* is a term that has also been applied to this kind of tumor on a bone. Now *steatomata* is the technical term denoting tumor of fatty consistency; but I rather fancy that tumors of a fatty kind are not common in the bones—at least I do not recollect ever seeing a production that I should call *steatoma* in a bone.

*Osteo-sarcoma* is described by several writers, and particularly by several modern ones, as an affection of the most serious kind, usually terminating fatally. Now, on that subject, I must observe to you that the fleshy tumors produced from bone may be divided, like those which arise in the soft textures of the body, into two classes—the *innocent* and the *malignant*. There are some which do not tend to the destruction of the individual; there are others which are of a cancerous or fungous character, and which do tend to such destruction; but we are not to suppose that the latter character belongs to all the fleshy tumors that arise on a bone.

The *innocent* osteo-sarcoma is a tumor of a very dense consistency, slowly rising from the surface of a bone closely connected to it, occupying several years, perhaps, before it attains a very considerable size; attended, for the greater part of this period, with very little pain to the individual, but perhaps at a certain time becoming painful; sometimes growing to a very great magnitude, so as to interfere with the use of the part in which it is developed, although in no other respects dangerous.

[Mr. Lawrence here presented a slice of an osteo-sarcoma of the thigh, obviously

consisting of only a small part of the tumor. They would (he said) easily estimate the size that the whole tumor possessed, when he informed them that that part which he exhibited was at all events not more than a fourth or one-third of the tumor. There was a small part cut through, to shew the dense and compact texture. It also exhibited a kind of uddery texture, with a cavity in the inside which contained fluid. Mr. Lawrence then presented the thigh-bone of the individual from whom the specimen was taken.]

It was amputated (the lecturer continued) in this hospital, very near the hip-joint. You observe there is a certain part of the bone from which the tumor has proceeded, upon which a considerable bony growth has taken place; spiculæ have extended from the thigh-bone, and formed a kind of basis of the tumor, so that the growth, in this instance, consists of an intermixture at the base, of sarcomatous with bony structure, while the great mass of the tumor, and particularly at the external part or circumference, is simply sarcomatous. Although the tumor had arrived at this great size, it was of an innocent nature. It occurred in a female, and the thigh was amputated by Mr. Ramsden, high up; and, if I do not mistake, the patient died of tetanus. This [shewing it] is an osteo-sarcoma of the fibula, close below the knee-joint. I amputated the limb, some few years ago, in this hospital. The case occurred in a woman under forty years of age, in whom the tumor had been growing for a great number of years, during the latter part of which it became more painful. It was seated so close to the knee that I could not venture to take away the tumor, and was obliged to remove the limb. An osteo-sarcoma may be so situated as to prevent you from being able to remove the tumor from the bone; but as it is not on all occasions painful, it is sometimes allowed to acquire a great size, before it becomes necessary to remove the limb altogether.

[Mr. Lawrence next presented a specimen which, he said, had something of a malignant character—it was osteo-sarcoma of the tibia.]

Now the *malignant osteo-sarcoma* differs from the innocent in two important points. It is attended from the first with great pain, and it grows very rapidly. I have seen, within the last two or three years, two remarkable cases of osteo-sarcoma, growing from the *os inominatum*; one in a young woman about twenty years of age, the other in a man about forty or fifty; which both proved fatal in five or six months—while one of the innocent osteo-sarcomata will be growing for as many years. In both these instances they acquired, before the death of the patients, a very considerable magnitude; and as they extended towards the opening of

the pelvis, through which the large nerves of the lower extremities proceed, they were attended with the most direful pains, not only in the situation of the tumors but through the limbs—pains that could only be rendered tolerable by opium. These are, in fact, instances of fungus hæmatodes occurring on the bone; but the subject of fungus hæmatodes has already been explained to you.

The *innocent osteo-sarcoma* is an affection not unfrequently occurring in the lower jaw, and it is to a growth of that kind to which the operation of excision is applicable—an operation which has of late years been repeatedly practised. The complaint in this situation is characterized by a hard tumor closely connected with the bone, growing slowly, particularly that part which is seated within the arch of the lower jaw, interfering more or less seriously with the motions of the tongue, the functions of mastication, deglutition, and articulation; thus, in fact, bringing the patient ultimately into that state in which a very hazardous and serious operation is necessary, to prevent the occurrence of, perhaps, death, or consequences that are worse than those of the operation itself.

I think it was some time about the year 1821, that one of the first operations for excision of the lower jaw was performed by Dupuytren, in Paris. He removed nearly the whole of the anterior part of the bone. His mode of proceeding was very simple: he cut the lower lip straight through the middle, carried the incision over the chin down to the *os hyoides*, then turned back the flap over the alveoli of the jaw, and carried the incision so as to detach the parts within, and finally dividing the bone near the ramus. Various modifications have been adopted according to circumstances in each case that required the operation, so that we cannot lay down a particular rule. Sometimes the commissures of the lips have been slit down towards the side, and the flaps turned downwards. It may be observed to you, that no very large vessels are necessarily wounded in the operation. If you carry the knife and dissect close upon the lower jaw, you do not necessarily wound any arteries of considerable magnitude, and do not come in the way of any organs of very great importance. At the first proposal, the idea of excising the lower jaw sounds very formidable; but it is, perhaps, an operation not so serious as others that are performed with less apprehension; for, by the separation of the lip or cheek in the way that I have mentioned to you, you can easily denude the bone, to take away the morbid growth:—and the division of the bone can be easily accomplished by a small saw, or the various mechanical contrivances used for such purposes. When the bone is removed, the soft parts are brought back to their natural situation. If the lip or cheek be di-



vided, they are kept in their place by sutures, and united by the first intention, so that after the operation has been performed, really you would hardly be aware that the lower jaw was gone. Patients appear tolerably well after this operation, but I suppose they do not chew their food quite so well as they did before. However, according to the accounts of the operators, they seem to do so wonderfully well. It is, however, interesting to know that, under many circumstances, you have the power, by operation, of liberating the patient from an extremely painful state of loathsome disease, which interferes with many of the most important functions, and restoring him, if not to a completely sound state, to a condition which is one of comparative ease and comfort.

#### *Diseases of the Teeth.*

I believe I have nothing more to say respecting the bones, except to advert shortly to the *Teeth*; and concerning these I do not think that they are subject to disease—that is, it appears to me that the teeth do not possess vessels when they are once fully formed; that they have no means of exhibiting the process of disease, nor the power of repairing injury, which belongs to bones and other parts of the body; and that the disease called caries is the result of the chemical action of food and other acrid substances taken into the mouth.

However, the affections of the teeth are in the hands of a particular class of practitioners, and I have not an opportunity of saying any thing to you from my practical knowledge; I can only say that, from the best attention I could give to the formation of the teeth, and their structure, I am induced to refer all the results of caries, and other affections of the teeth, to the effects of chemical operation on the surface of those bodies. The pain experienced in caries, or the painful effects produced in the teeth independently of that, from cold substances and other ingredients taken into the mouth, are referrible to the action of those agents on the nerves contained in the interior of the teeth. If a person whose teeth are unsound take any thing hot into the mouth, a peculiarly painful feeling is produced in the teeth, in consequence of the effect communicated to the nerves, which are in the cavity of the teeth. In the same way, when a portion of a tooth is destroyed by the process called caries, foreign substances taken into the mouth are capable of affecting the nerves in the way which we have all experienced in tooth-ache.

The teeth very often wear down, in consequence of decay, with very little pain, and the stump of the tooth remains in the jaws.

It not uncommonly happens that a peculiar kind of inflammation occurs to the gums and the sockets containing the teeth, attended with redness and a spongy state of the gums, with a gradual separation of them from the necks of the teeth—often with the formation of a kind of matter between the gums and the remaining portions of the teeth—the denuded fangs.

In this way, either from the stumps being left in the jaw, or this peculiar affection of the gums, the teeth very often become a source of great irritation to the bone in which they are implanted; and are capable in that way of exciting various painful sensations of a very distressing kind in the jaw and neighbouring parts; and you would hardly be aware at first how seriously the health of an individual may be affected in consequence of a cause beginning in one small part of the body such as this. In cases, therefore, where pain or uneasiness may be experienced about the jaw, it is expedient to pay close attention to the state of the teeth and gums—to examine them carefully to see that they are in a sound state; or if not, to take care that any decayed or rotten stump should be removed, so as to take away the irritation; or if the gums are found in the condition that I have mentioned, to take care that suitable means be put in practice by the dentist to put a stop to the disease.

#### *Necrosis.*

Mr. Lawrence concluded his lecture by presenting a specimen (which, he said, he meant to have pointed out before) of necrosis of the femur. It is worthy your attention, for here you see the dead portion of bone occupies the entire shaft of the femur. It has been sometimes contended that the portions of bone found in the interior of the new deposition consist only of the internal laminae, and that the new bone is merely an expansion of the old one; but in cases like this, you can distinctly see the new osseous substance constituting a part of the entire shaft of the femur. You see the vascularity of the lining of the tube in which the bone is contained, and in this particular case a circumstance occurred which sometimes happens:—I pointed out to you that the new case of bone is not an entire sheath, embracing the old bone in every direction; but that there are often considerable vacuities—sometimes there may be such vacuities extending all round it—in fact, the new bone may be said to consist of two pieces, connected by the soft parts, so that when the old bone gives way, there will be a great shortening in the limb. That is the case in this instance—the upper and lower portions are connected by soft parts, so that there was a great shortening of the limb. In this instance it was necessary, on account of the

great sufferings of the patient, the extensive formations of matter, and the reduced state of the limb, to amputate the thigh, which I did in the situation of the trochanter major. I cut off two-thirds of the trochanter major, which is much the same as amputation at the hip-joint, for I could have taken out the thigh-bone from the socket very easily. This case did well.

I mentioned to you that in the removal of the sequestrum in necrosis, certain means were to be employed for taking away such part of the new osseous case as might be necessary to give a complete exposure of the old bone, in order to admit of its extraction; and then I spoke to you of the strong bone nippers, which have been introduced by Mr. Liston. These are instruments in their operation similar to the bone nippers that you have in a case of amputating instruments; but the blades of the nippers are in the same line as the handle of the forceps—they are brought to a cutting edge, and being made strong, you can exert a sufficient force to cut through the bones of the fingers, or toes, or the fibula; or through a considerable part of the new bone found in necrosis. It is a kind of instrument that is very useful on a variety of occasions. These are (shewing them) very strong cutting forceps, made thick at the back, but brought to a cutting edge, and that, combined with the position of the handles, and the strength of your hands, will enable you to cut through the fibula. This, again, is (producing it) the small saw, called Hey's saw, which is used on this occasion, and on many others. There is a small part of the saw straight, and on the other side of the instrument there is a small part with a semi-circular edge, so that with this we can saw in a curved line, taking away a curved portion of the bone when we want to produce an exposure without taking away the large portion which is removed when you employ the trephine.

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## LITHOTRITY.

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### *Lithotritry considered in relation to the state of the Urethra.*

Translated from the Manuscript of

BARON HEURTELOUP.

[Continued from page 369.]

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If the observations which we made on the examination of the urinary organs be remembered, as also in what manner a straight sound introduced into a

healthy canal modifies this passage, it will be found that certain parts of the canal, or the adjacent parts, experience a degree of tension, produced by being brought into a straight line, which the introduction of the right lined catheter requires.

Each of these parts, then, which are brought into this right line, with more or less of difficulty, will, in exact proportion to that difficulty, form obstacles to the introduction of the instruments necessary for the crushing of the calculus, and consequently render lithotritry more difficult, and sometimes even impossible.

The urethra in its course presents three principal points, which, by their anatomical relations, can sometimes only be brought to a right line with great difficulty. The first of these corresponds with the insertion of the urethra to the symphysis pubis, by means of the ligamentous fibres; the second where it passes on the inferior edge of the pubis; and the third at the neck of the bladder.

In some persons the penis is attached to the anterior portion of the symphysis pubis by a ligament, which, though rarely varying much in tenuity or laxity in any subject, yet unites it to the bone to a much greater or less extent. As long as this ligamentous tissue, which forms the attachment between the pubis and penis, does not extend far towards the superior portion of the symphysis, it is easy, whilst the extremity of the straight sound is under the pubis, to bring the urethra on a level with these bones; but if, on the contrary, the penis is attached to the symphysis for a considerable extent, as sometimes happens, the straight sound introduced below the pubis draws the canal from below in direct proportion to the height of this insertion.

There are other persons, again, in whom the part where the pubis divides is extremely low. Whether it be from the bones of the pelvis being thus formed, or because the triangular ligament is very large, a result of this condition which often happens with the one we have just alluded to, is a very great difficulty in lowering the straight sound, so as to get it under the pubis; for besides the obstacle which arises from the long insertion of the suspensatory ligament, is added that which results from the low falling of the pubis.

Finally, there are other persons, again, in whom the opening of the urethra into the bladder is naturally situated very high—so that when we have introduced the sound under the symphysis it is necessary to depress the handle considerably below the horizon, in order to enter the bladder. This difficulty, when it is the only one, is easily overcome when we are about to operate; but if, unfortunately, it should happen with those which we have already described, the result is that the instrument, when introduced into the bladder, through the parts thus brought into a right line, is drawn in several opposite directions, which makes it almost immovable; and if these difficulties are carried to a great extent, necessarily impede excessively the manœuvring of the instruments.

A surgeon, in the habit of practising lithotritry, perceives immediately by the position of the instrument which of these difficulties forms the principal obstacle to the easy introduction of the right lined sound, and to its mobility when in the bladder.

In ordinary circumstances, the instrument when introduced, and left to itself, remains in a direction which makes an angle of from eighteen to twenty-two degrees with the horizon, being above it, and it is easily moved from before backwards. If there should be any difficulty from the suspensatory ligament, the instrument, when untouched, forms a larger angle with and above the horizontal line; if, on the contrary, it arises from the neck being high, the angle is diminished. If it arises from the low falling of the pubis, the instrument, when left to itself, rests sometimes above and sometimes below the horizontal line; but it is observed, that altogether it is lowered and carried towards the anus; and, finally, if these three varieties should exist at the same time, the handle of the forceps, according as this instrument is most influenced by the ligament or the neck, is carried above or below the angle which it forms with the horizontal line in ordinary cases; but it can only be moved from before backward with great difficulty; and the facility with which this movement may be made is of great importance in the operation of lithotritry.

Few patients have these irregularities of situation to such a degree as to render the performance of the operation impossible, especially when the stone is

small. Nevertheless, among those whom we have had occasion to examine, two have offered such difficulties to the introduction of the instrument that we thought them more likely to be relieved of their disease by lithotomy. They had calculi, of considerable volume, so that it would have been necessary to return too often, more particularly as they could only have allowed a very limited time for the cure; for whenever the introduction of the instrument is attended with so much difficulty, its retention in the urethra is always painful, and the patients are unable to support it long; the consequence of which is, that during each sitting but very little progress can be made in the destruction of the stone. For these reasons it is also desirable not to fatigue the patient by forcing the passage into the bladder, except when the stone is likely to be destroyed in one, two, or three sittings at most. It is evident that the propriety of practising lithotritry in these cases depends upon the degree of difficulty experienced, and that it is impossible to establish an invariable rule: the decision must be the result of the surgeon's own judgment and tact.

When the introduction of the instrument is rendered difficult, or impossible, from the causes we have just enumerated, the canal is often very large, and would admit a sound of much greater diameter than the instrument employed; the want of space, then, has nothing to do with the difficulties, for frequently, when a large, straight, inflexible bougie will not pass, one several sizes larger is introduced with great facility, on account of its curvature and flexibility.

The smallness of the urethra, however, is also a very troublesome condition for the lithotritic operator. In ordinary cases, as has been already remarked, the urethra in the adult is from three lines and a half to four and a half in diameter in the most contracted parts; but there are certain persons in whom, notwithstanding the full development of their organs, the urethra is found naturally very contracted—so much so as only to receive instruments of from two lines to two and a half, or three quarters, in diameter. In these patients, the pulverization of the calculi is rendered difficult by the impossibility of employing instruments of sufficient size to make their action on the stone



energetic and rapid. The fragments also are expelled with difficulty. When the question arises as to the expediency of operating on these patients, especial attention must be paid to the size of the calculi: if these are large, the operation will be long and painful, for the reasons which have been already given; but if the diameter of the stone be not greater than from ten to twelve, or fourteen lines, the operation may be performed with success; but if there are many, and all of them this size, it is most probable the operation, if begun, could not be continued.

In these patients we may attempt to dilate the canal by means of bougies; but we ought to add, that the attempts we have made to obtain this result have not been satisfactory. As soon as a bougie is employed which requires a moderate distention of the urethra, the membrane becomes irritated and inflamed, and contracts rather than enlarges: at best we can only hope to effect a dilatation by these means when employed with perseverance daily, for a very long time, and by scarcely perceptible degrees; and this is what the invalid will not always submit to, when impatient to be relieved of his sufferings. But after all, in patients thus situated it is the volume of the stone which decides every thing; they are liable, in this respect, to the same objections as children, only that they possess one condition considerably in their favour, which children have not—that of being tranquil during the operation.

There is yet another condition which may be ranged in the list of obstacles caused by the small diameter of the urethra—and this is a contraction at the orifice, or *meatus urinarius* \*.

These contractions of the urethra, whether accidental or morbid—to whatever cause they may be owing, whether to a gonorrhœa, which is the most frequent, or any other—form one of the conditions which render lithotripsy either difficult or impossible. We have thought that the result of attempts at dilatation was unfavourable in those cases where the canal has been naturally contracted, but healthy: we ought, how-

ever, to endeavour by these means to form a passage for the instruments required to pulverize the stone, in a case where the canal has suffered an accidental contraction. In this last, instead of its existing in the whole course of a canal endowed with life and contractility, it is limited to a single point, or at least it seldom occupies any great length of the urethra; it is generally caused by a kind of excess of irritation in the membrane, which is thickened at the point of contraction, and *most commonly* devoid of life or contractile power. It may be removed by bougies, dilatating agents, or caustic; or, in fine, it may be treated by the combination of these means.

Notwithstanding, however, the possibility of enlarging the calibre at the orifice sufficiently to admit the lithotritic instruments, we cannot conceal from ourselves that this condition often prohibits the operation. In fact it is rare, notwithstanding the most judicious employment of caustic and dilating bougies, that we restore to the contracted point the same capacity as the rest of the canal. This part is always difficult to pass with the instrument, and more especially for the passage of some of the fragments which may be rather larger than the rest; they are sometimes stopped at this point, and cause an irritation in proportion to the time they remain there. In the next place, it is very difficult, when these fragments are thus retained, to extract them; the means we are obliged to resort to are long and painful in their action, and cause the surgeon more trouble and the patient more pain than the pulverization of the calculus. I have had several patients offer themselves for operation with similar contractions, but I have not thought it expedient to perform it, on account of these difficulties; which common sense alone has been sufficient to prove insurmountable. One patient only, formed an exception to this rule; he had slight contraction of the canal, and a calculus in the bladder. He was cured by the lithotritic operation. I undertook to treat him, because he suffered only from some very small stones, which I was enabled to pulverize very rapidly. Notwithstanding, however, the canal was dilated to three lines and a quarter, the fragments passed with difficulty, and were sometimes retained

\* This is fully treated in another chapter, as also the slight operation which is necessary for the removal of this obstacle.—J. R. A.

in the urethra, either from the dilated portion not retaining the width given to it by the bougie, or that it wanted the kind of expulsive contractility which is observed in a healthy urethra, and which was carried to a great degree in the canal of the patient of whom we are speaking. All the other patients had stones relatively much too voluminous for the difficulties arising from the contractions.

It will be evident how difficult it must be to decide upon the expediency of having recourse to lithotrity, in a case of contraction, before any attempt has been made to remove it, since it is the calibre of the canal which gives the measure of the power of the instruments which we can use, and of the greater or less facility with which the patient can expel the fragments. It is impossible, therefore, to decide on its expediency in these cases until the greatest possible dilatation has been obtained; hence, in a case of stone complicated with stricture, we ought first to treat the stricture, if there be any doubt as to the propriety of operating; and indeed this is the plan that ought naturally to be adopted, whether the operation shall be applicable afterwards or not, since it will still be rendering a service to the patient. If, on the contrary, the diseased state of the bladder and the size of the stone leads us to conclude from the first moment that lithotrity ought not to be attempted, it would be better at once to perform the operation of lithotomy, provided the stricture be not arrived at such a state as to prevent the introduction of a staff.

A large scrotal hernia is not an insurmountable obstacle to lithotrity, but it embarrasses the manœuvres, inasmuch as it throws the canal to one side, and prevents various movements which it may be necessary to give the instrument.

Stones engaged in the canal give rise also to great and sometimes even insurmountable difficulties; especially when the calculus becomes organized in the canal and can only be withdrawn by an opening. One of these cases has fallen under my observation. The opening healed after the removal of the stone, but the part of the canal that had been opened was too much contracted to allow the lithotritic instruments to pass for the removal of other stones which remained in the bladder. Lithotomy was performed on this patient.

There is another consideration of some importance to be well attended to on the subject of calculi; and this consideration arises from the existence of lithotrity. Before the art of pulverizing a stone in the bladder was invented, when a foreign body was felt in the urethra the rule was to be careful not to push it back into the bladder—but to extract it by making a small opening in the canal;—and this course was necessary to be adopted in order that the stone returned to the bladder might not make the operation of lithotomy imperative at some future period; but now that we are enabled to remove a stone thus pushed back, by less dangerous and painful means, the reverse of this ought to be the practice—that is, if a stone can be returned, it is much better than to have recourse to the knife to extract it; for if this operation is unimportant, compared to lithotomy, so is it much more of an operation than lithotrity would be. The advantage thus gained by lithotrity becomes still more important when we consider that, in cases where stones in the urethra have been removed by the knife, we have often been obliged, after having obtained the cicatrization of the wound in the urethra, to perform lithotomy, in order to extract other small calculi which remained in the bladder, and the existence of which were probably not suspected; the stone retained in the urethra, obstructing the passage, precluded all possibility of ascertaining the existence of those behind it.

A canal in which the mucous membrane is soft and fungous, is disadvantageous for lithotrity; it does not prevent the introduction of the instruments, but it renders the removal of the fragments difficult, for their rough inequalities press into the membrane, which does not offer sufficient resistance; the consequence is, that the pieces are stopped midway, and remain fixed in the urethra; from whence, however, they are easily dislodged, for the canals in which the internal membranes in this state are generally very large, and possess but little sensibility. They are most frequently met with in old age.

In fine, there are persons, though very few in number, in whom the urethra is so exquisitely sensible that the introduction of a gum bougie causes them a degree of suffering that is insupportable. In some this continues,

in spite of all the means that can be resorted to for the purpose of diminishing it; but in the greater number this disposition has generally ceased after the daily introduction of flexible bougies, to which the urethra becomes gradually accustomed. We must be careful to avoid using bougies so large as to stretch the urethra, for with these patients too great extension is insupportable, and instead of lowering the sensibility it excites and increases it. The simple contact of a moderate sized bougie against the sides of the urethra, brings us to the desired result better than distention.

*Lithotrity considered in its relation to the Prostate Gland.*

The state of the prostate influences much the degree of facility with which this operation is performed. This gland is placed under the neck of the bladder, forming a kind of saddle, on which is lodged the commencement of the urethra and the neck of the bladder. It must be evident that the changes this part may undergo in its size and form will necessarily affect a canal so intimately connected with it. The different conditions of this organ, then, ought to be particularly considered whenever the operation of lithotrity is proposed.

The prostate is generally small, of a regular form, the mechanical influence of which is commonly at the commencement of the urethra and on the neck of the bladder, and helps to support and strengthen both the one and the other. Unfortunately for the success of lithotrity, it is extremely liable to enlargement from any irritating cause which determines the blood to it.

When the prostate has thus enlarged, it impedes the operation, both as regards its thickness and its breadth. Its thickness is often an obstacle to the easy introduction of the instruments, and particularly when it takes place where the neck of the bladder is higher than usual, the pubis lower; or when there is a ligament which binds the penis down in too much of its extent to the symphysis, the introduction of the instrument is rendered altogether impossible, or at least too painful, which amounts to the same thing. When it is the thickening of the prostate which forms the only obstacle, this may be surmounted by means of the introduction of sounds. Flexible catheters should first be used;

in which, as soon as they are introduced into the bladder, stilettes more or less curved, so that, by gradual degrees, we succeed in depressing the prostate and facilitating the introduction of the instruments. However, when the gland is voluminous, and this state has existed for a long time, the instrument, though it may be introduced, is manœuvred with difficulty; for the lowering of the instrument, which is necessary for the seizing of the stone in the *bas fond* of the bladder, is rendered by this disposition extremely painful to the patient.

Sometimes we meet with prostates which, notwithstanding they are of but small size, are more developed in proportion to the rest in the middle part, so that the prominence it forms at this point has been called by some anatomists the middle lobe of the prostate. We should imagine this conformation would prove an obstacle to the easy introduction of the lithotritic instruments; but it is unnecessary to say more on this subject, as we have not seen any case of it.

The prostate forms, sometimes, a kind of pocket or groove of considerable depth, in which the instrument is hooked, and cannot be freed without a forcible movement downwards with the handle, or by making it turn lightly upon itself. It is particularly difficult to free this part when we wish to pass the instrument into the bladder, added to which, there is a small fold formed here by the internal membrane of the bladder. This is sometimes met with at the inferior portion of the neck, and is semi-circular; and when it is well marked it enlarges the cavity of this "*cul de sac*" already described. It is this fold which a modern anatomist has termed the *valve of the bladder*.

In fine, the prostate not only renders lithotrity more difficult by the thickening which sometimes takes place, but its volume, when it is large, impedes the operation excessively, and sometimes renders the movements necessary for seizing the stone and fragments impossible, when the patient is in a horizontal position. Enlarging sometimes by the excess of blood carried to it, to which it is liable, especially when a stone has been in the bladder for a long period, to a diameter of from two inches to two and a half, from the superior to the inferior edge, and trans-



versely, it raises the inferior portion of the neck of the bladder and increases the cavity which we have named "*fossa ovalaria*," the superior border of which corresponds exactly with the inferior edge of the prostate. Sometimes, increased to the size we have described, the gland encroaches into the middle of this cavity, and pushes it to one side; the result of which is deformity of the *bas fond* of the bladder, its diameter from the anterior to the posterior part is diminished, and the side cavities are increased. If, with this augmentation of the prostate, the bladder has still sufficient depth, from the anterior to the posterior portion, the stone will still remain below the neck of the bladder, but cannot be seized without great difficulty, for it is wedged in, as it were. If, on the contrary, the bladder be contracted in its anterior posterior line, and especially if, notwithstanding that, it has retained sufficient space laterally, the stones will be found at each side, and are always seized with great difficulty, and sometimes are so lodged that it is utterly impossible to attain them.

[To be continued.]

## OBSTINATE OBSTRUCTION OF THE BOWELS.

*To the Editor of the London Medical Gazette.*

SIR,

ON Saturday, the 30th ult. I was requested by Mr. Richard Cremer, a respectable surgeon of this town, to visit J. L. æt. 24, a linen-draper, whom he represented as suffering from obstinate obstruction of the bowels, assuming the character of intus-susceptio. Mr. Cremer had not been in attendance 48 hours when I saw the patient, during which time, however, he had adopted most vigorous and proper remedies for his relief. The patient had been bled largely from the arm; twelve leeches had been applied over the seat of pain, which was referred principally to the umbilical region, and which was much relieved by the depletion. Calomel and Colocynth pills, a mixture of Infus. Sennæ with Magnesîæ Sulphas. and Tiuct. Jalapæ, and Croton as well as Castor Oil, had been given by the mouth; whilst purgative and common

enemata had been injected. The bowels, nevertheless, remained unmoved; the pulse was becoming more frequent; tongue dry; stomach very irritable, rejecting almost every thing as soon as swallowed; the countenance was expressive of great anxiety, and the patient was growing very restless and despondent, complaining also of much faintness and debility. I merely ordered him draughts of Sodæ Sulphatis ℥iij. in Aquæ Ment. vir. ℥iiss. alternis horis, in the hope that they would not be vomited, and might tend to act on the bowels; for, notwithstanding the general prejudice, I find the Sodæ Sulphas. far less nauseous and less nauseating than the Magnesîæ Sulphas., whilst its action is milder, and less likely to gripe. On calling very few hours afterwards, I found the symptoms much as before, the bowels not evincing the least disposition to relax. I therefore ordered the following mixture, which I have found very efficacious and palatable:—

R Olei Crotonis Tiglij ℥iv.

Olei Ricini ℥ss.

Mucil. G. Acaciæ ℥i. Probè simul  
terantur cum Lactis Vaccin. ℥iiss.

M. sumat Coch. unum singulis horis.

and directed Mr. Cremer to introduce a long flexible tube, affixed to one of Read's Injecting Syringes, as far as possible up the rectum, and continue forcibly to inject large quantities of warm soap and water, till some effect was produced. The tube having been gently introduced from twelve to fourteen inches, and two hand-basinsful of fluid having been injected, without any pain or inconvenience to the patient, it began to return per anum, when the tube was withdrawn, and he was placed on a night chair, being unable to retain it. To our disappointment no fæces could be detected, the fluid being merely coloured by what remained in the intestines below the obstruction. He was put into bed, and the mixture was directed to be given during the night.

On the following morning we found him unrelieved. The stomach had only rejected one dose of the mixture, but hiccough had supervened; the pulse was more rapid, and the symptoms more threatening. The soap and water injection was repeated as before, but with the same result. I then advised a large blister to be applied to the ab-

domen, which was becoming somewhat tense; and as soon as it began to draw, tobacco smoke to be injected; a practice which has frequently succeeded under my observation, and which I prefer to the infusion. After using the bellows for many minutes, I was mortified to find the obstruction so imperious, that even smoke would not pass, and returned as fast as it was thrown up. The pulse scarcely altered under the process; and although he vomited a little coffee which he had taken, as the only thing in the shape of nourishment that his stomach would retain, he did not evince the usual signs of his nervous system being affected by tobacco. All prospect of relief was now drawing to a close; but as a *dernier resort*, although a hopeless one, we poured a pound of liquid quicksilver down his throat, after which he was taken out of bed, sat erect, supported by his friends, and walked two or three times about the room. This was, however, as unsuccessful as the other means; he became gradually weaker, and in the course of the night expired.

On opening the body, and tracing the intestinal tube carefully from the duodenum downwards, we found it considerably distended with air, and the greater part of it in a highly vascular state, with patches shewing acute inflammation; when, on reaching the cæcum, we were surprised by an appearance of the intestine bifurcating. On a closer examination, we found that the head of the colon was so contracted for several inches in its diameter, as with great difficulty to admit the little finger, being hardly larger than a common goose-quill; the *appendix cæci vermiformis* being more than four times its usual length and diameter, distended with fæces, and containing a small quantity of the quicksilver he had swallowed. The contracted portion of intestine seemed to have been convoluted and twisted in an extraordinary manner, so as to render it quite impossible for even quicksilver or air to permeate; whilst below it, the canal was entirely empty, and washed out quite clean.

The young man had frequently complained during his life of an uneasiness in the abdomen, and of his bowels being so costive that he was continually obliged to take opening medicines. It is evident, that if not a congenital malforma-

tion, this contracted state of the intestine had long existed, and that he was constantly liable to a fatal obstruction in consequence.

I am, Sir,

Your obedient servant,

J. C. BADELEY, MD.

Chelmsford, June 3, 1830.

# DISEASES OF THE SKIN. — THE "BURLING MEDICINE" IN HY- DROPHOBIA.

*To the Editor of the London Medical Gazette.*

Kent, 22d May, 1830.

SIR,

I INCLOSE for your approval a few remarks upon diseases of the skin; and, at the same time, I beg leave to direct your attention to a prejudice very general in the county from which I date, and, as you will readily allow, very dangerous wherever it may exist. I allude to the popular belief, that what is called, after the name of a village near Maidstone, the "Burling medicine," is a preventive of hydrophobia, after the bite of a rabid animal, and an efficient remedy for the disease when present. As this is a belief deeply rooted in the minds, not only of the vulgar, but also of many intelligent and otherwise well-informed persons, I cannot but think that any correspondent of yours, who could favour us with a few *authenticated* cases of *failure*, would do an essential service to the public. I have heard the praises of this medicine in other counties than this, and accompanied by expressions of the firmest reliance upon its powers. *Rumours* of cases in which the remedy has been tried comparatively with cauterization, and even excision, and has been proved superior to them both, are constantly in circulation.

I am, Sir,

Your obedient servant,

Φ.

P. S.—Query for your reporter at St. Thomas's:—

In the recent case of hydrophobia, what were the circumstances which limited the doses of guaco, and their repetition?

## DISEASES OF THE SKIN.

The following remarks, by way of supplement to Mr. Lawrence's recent lectures upon this subject, may not be unacceptable to the readers of the Medical Gazette, who cannot fail to have observed that the diseases in question are treated of more briefly than one might expect even in a surgical course, and perhaps, too, not quite so systematically as might have been wished. The general excellence of the few lectures alluded to, it would be unjust to deny,—as far as they go, they are most valuable; but though they are seldom wrong, they are occasionally deficient.

Without staying to inquire whether Alibert deserves no further or more favourable notice than Mr. Lawrence has bestowed on him, it may well be wondered at that the name of Plumbe is not found among those of our system-makers in cutaneous nosology. The arrangement proposed by that gentleman, though erroneous in some of its principles, and very difficult in its application to practice, is still an ingenious and useful attempt, bearing much the same relation to the superficial scheme of Willan and Bateman, as Linnæus's *Fragmenta Methodi Naturalis* did to his more popular Sexual System of Botany. Moreover, it is adopted in Dr. George Gregory's Elements of the Theory and Practice of Physic,—a work which is the text-book of very many students and junior practitioners.

From that work is extracted the following table of Plumbe's four orders of chronic cutaneous diseases:—

“ORDER I.—Diseases strictly local, deriving their character from local peculiarities of the skin:—

1. Acne and Sycosis. [lata.
2. Tinea capitis, or Porrigo scutu-
3. Psora, or Scabies.

ORDER II.—Diseases marked by chronic inflammatory action of the vessels forming the cuticle, producing morbid growth of that structure. Constitutional causes or influence uncertain:—

4. Lepra.
5. Psoriasis.

ORDER III.—Diseases having a decidedly constitutional origin, and cha-

racterized, in their progress, by local and constitutional excitement:—

6. Strophulus. 9. Prurigo.
7. Eczema. 10. Impetigo.
8. Porrigo.

ORDER IV.—Diseases dependent on debilitated states of the constitution, and characterized by diminished tone of the vessels of the cutis:—

11. Pompholyx.
12. Ecthyma and Rupia.”

Notwithstanding, however, that this arrangement has its good points, it is unquestionably, for practical purposes, far inferior to that which was originally devised, in 1796, by Plenck, and was greatly improved by Willan and Bateman, and which has since undergone some considerable modification at the hands of various writers. Among these is M. Biett, of the Hôpital St. Louis, who, though less known in this country than some other French authors on cutaneous diseases, from having never yet published an entire treatise upon the subject, is probably the first cutaneous pathologist on the continent, and is certainly the most popular clinical lecturer in Paris.

*Roseola* and *Erythema*.—If these diseases are worth separate names, they are at least worth a differential character. In *roseola*, the redness is strikingly similar to that of the rose, being pink rather than pure red, and is in patches more or less circular, larger than those of measles, and smaller than those of scarlatina. In *erythema*, the blotches are of a decided red, and though distinctly circumscribed, they affect no regular form. There is a species of *roseola*, the *R. annulata* of Willan, which bears some resemblance to the “rare and beautiful” *herpes iris*, when the herpetic vesicles have disappeared. In both these are concentric circles of discolouration; but in the *roseola* there is perfectly sound skin in the centre, and the rings are all of one tint; while, in the *iris*, we find the central portion more or less unhealthy, from having been the seat of the chief disease, viz. the cluster of small vesicles; and the rings surrounding it are of several different shades, as the specific name elegantly implies. Though it is difficult to imagine that *roseola* is contagious, yet it is worthy of notice that M. Biett says, he has several times seen it epidemic, in



the out-door practice of the Hôpital St. Louis, during very hot summers.

*Erysipelas*.—Cold local applications are recommended by Mr. Lawrence at the onset of this disease. Surely this is not the opinion of the profession in general, unless, indeed, the cutaneous inflammation is of very small extent, or is produced by a local cause, or unattended with any symptoms of visceral disorder. The learned lecturer interprets the recommendation often given to apply flour to the inflamed surface, into a confession “that local applications are of no use at all.” The truth is, that such as advise that remedy, are of opinion, that it does good by excluding the air, the irritating effects of which, in that kind of erysipelas which attends scalds or superficial burns, are hardly to be denied. Dupuytren and some others have a spirited plan of treating erysipelas when it shows a disposition to change its place or to recede. They apply a blister to the affected surface, and thus, they say, effectually check either of those inconvenient or dangerous tendencies. There are some useful distinctions of erysipelas, according to the part attacked: two of these may be noticed here. *Erysipelas of the Scalp* is especially prone to terminate in supuration and sloughing of the subcutaneous cellular substance; but the skin above very seldom mortifies, from the circumstance that its supply of blood is furnished, as Dupuytren has remarked, by very large branches distributed over its inner side. Cerebral symptoms are, however, exceedingly frequent. *Erysipelas of the Breasts*, in women, is very apt to assume a phlegmonous character. Pain is succeeded by swelling and redness round the nipple. The inflamed surface increases in all directions, and has generally a number of small vesicles at its circumference. A large portion of the skin becomes gangrenous, leaving the nipple and its areola in the centre totally free from disease.

*Scabies*.—Mr. Lawrence states that this disease is seen “sometimes in the form of vesicles, sometimes in that of pustules, and sometimes in the form of pimples, these forms appearing separately or conjointly; so that it would seem to have nearly an equal claim to a place in three of the orders established by Dr. Willan.” He acknowledges, however, that “the more common form of itch

consists of an eruption of small, clear, transparent vesicles, on an uninflamed skin;” and also that the pustular form of itch is never seen without an admixture of vesicles. Thus then it appears that itch never appears “separately” in the pustular form, and that it therefore has a very poor claim to be ranked with the pustulæ. Moreover, mention is made, and without an attempt at controversion, of an opinion that the papulæ ascribed to scabies have minute vesicles in their centre. If this be allowed, where is the claim of itch to a place in the order papulæ? But there is no objection to admitting that real pimples exist, though very seldom, even as a complication, and actually never alone. Bielt regards them as referable to *lichen*. As to the pustules observed in connexion with scabies, they may generally be traced with ease and certainty to *impetigo* or *ecthyma*. The latter disease is, in fact, admirably described in Mr. Lawrence’s second paragraph on pustular itch, as reported in the Gazette, (No. 125, Supplement, p. 150). The supposition that scabies has any other true element than the vesicle, is continually giving rise to the most groundless apprehensions. The quiet of families is disturbed, not only by a dread of the extension of this troublesome and discreditable disease, but by suspicions of its having been contracted in improper company. These considerations alone should be sufficient to make medical men most careful to avoid mistakes. It may safely be concluded that no scabies is present when no vesicles are found, nor any of the small, thin, yellowish crusts that succeed to vesicles, or when the vesicles are none of them between the fingers, or on the flexor sides of the joints, or on the fore parts of the body, or are only on the face.

Mr. Lawrence has not noticed the belief which many first-rate pathologists still entertain of the existence of the *acarus scabies*. The following translated extract from a recent French work, gives a pretty complete history of this hypothetical insect. “After being first recognised by Avenzoar, and then by Ingrassias and Joubert, described afterwards more at length by Moufet, designed after nature by Hauptmann; and, lastly, described with great minuteness, in the 17th century, by Francis

Redi, both as to its development and as to the mode in which it effects the formation of vesicles, the acarus was recognised, and classed in natural history by Linnæus, Segur, Fabricius, and Latreille."

Nevertheless, its existence was still doubted, when, in 1812, the experiments of M. Gales, formerly apothecary to the hospital of St. Louis, were so successful, as apparently to have set the question for ever at rest. His first attempts failed, but he afterwards obtained, as he says, no less than three hundred of the insects, and was even able to describe their mode of propagation, &c.

His experiments, however, have since been repeated by equally accurate observers with M. Gales, and have never had the same happy result. In 1813, M. Albert caused them to be made by a very skilful person, but no insect was found. It may be remarked, at the same time, that in his recent history of the itch, this author seems to return to his old opinion, and incline to a belief in the *acarus*. In 1818, 1819, and perhaps at twenty different periods since then, M. Bielt himself conducted a similar inquiry. He provided himself with excellent lenses, and with the best microscopes; he even employed the horizontal microscope of Amici. His observations were made upon a very great number of individuals, and under circumstances the most favourable for the discovery of the insect, if any there were. *Eh bien! il ne l'a jamais rencontré.*

These researches (the writer adds) have been made elsewhere than in France, and with the same ill success; and, in fact, "if ever insects were found it was not in true itch, but in the morbus pedicularis, a species of prurigo." The subject, however, has attracted too much attention to justify its being passed over without notice in any treatise, or lecture, upon so well-known a disease.

As to the treatment of itch, it is worthy of remark that Bielt employs an ointment much weaker than either of those prescribed by M. Rayer, and recommended by Mr. Lawrence, and yet gives an average duration of the malady (so treated) of only twelve days. He uses two parts of sulphur, one of sub-carbonate of potash, and *eight* of lard, employing the warm bath every one or

two days. For children he advises merely the free use of soap and water, and artificial sulphur-baths.

*Impetigo*.—Both pathologists and practitioners have generally agreed in making two species of this genus; the one, *imp. figurata*, has its group of pustules circumscribed, inclining to a round or oval form, and most frequently seated on the face, or at the bend of the arm. *Imp. sparsa*, on the contrary, consists of pustules, scattered without order; and, what is important to be remembered in practice, it is much more apt than the prior species to become chronic. To this genus Mr. Lawrence seems to refer the eruptions known by the names of the grocer's itch, the bricklayer's itch, &c. But are not these more frequently vesicular? And the same question may be asked as to the eruptions attending the use of blisters.

*Aene*.—Willan and Bateman have ranked this disease among the tuberculæ, and Mr. Lawrence follows them; but Alibert (who, besides being physician to the king of France, is also, and has been for many years, physician to the hôpital St. Louis, where there are several large wards devoted wholly to diseases of the skin) has long since placed it among the pustules, and Bielt sanctions the removal, the tubercles (so called) being frequently absent, and always preceded by pustules.

Φ

[To be continued].

## HOUR-GLASS CONTRACTION OF THE UTERUS.

To the Editor of the London Medical Gazette.

SIR,

I HAVE a natural dislike to every species of controversy; when, therefore, I lately addressed a letter to you, on the "hour-glass contraction of the uterus," I did not make any allusion to the opinions of Mr. Moss or Sir John Chapman on that subject. It appeared to me, however, that the case I then related would clearly prove the possibility of such an occurrence, even before the birth of the fœtus. Mr. Moss has now

thought it expedient to publish the statement made by Sir John Chapman at a medical meeting; I must, therefore, again solicit your indulgence, while I make a few comments on that statement. After some preliminary remarks, Sir John gives a very accurate description of the species of difficulty which occurred in Mr. Moss's case. He then attempts to shew the great improbability of a "central or hour-glass contraction of the uterus" ever taking place. As he does not deny the possibility of it, I shall confine myself to those arguments he uses to prove its improbability. The principal of these are, first, that he has never met with such a state of the uterus; and next, that it is contrary to the wise provisions which nature has made to facilitate the process of parturition. To the first argument I shall merely answer, that it is by no means applicable to medical practice. The occurrence of an hour-glass contraction of the uterus is a possibility admitted by all lecturers on the obstetric art. The contraction at the cervix firmly closing the os uteri (as in Mr. Moss's case), is also expressly mentioned by Dr. Conquest; but he makes a careful distinction between this and the true hour-glass contraction. Now it is paying an indifferent compliment to a large class of professors, to accuse them of having invariably mistaken the "os uteri" for a "central contraction, dividing the organ into two chambers." To the second position—that this state of the uterus would be "contrary to the wise order of nature,"—I answer, that the observation applies with equal force, to the first or cervical contraction, admitted by Sir John Chapman. In the regular progress of parturition, the os uteri, possessing the properties of a sphincter muscle, would gradually yield to its utmost limits, and, after the expulsion of the fœtus, would remain collapsed, but easily dilatable, till succeeding efforts of the organ had brought down the placenta into the vagina. But if, from some casual irritability of the os uteri, it should become closely and spasmodically contracted at this inconvenient time, what is there, I would ask, in the structure or physiology of the uterus, to render it improbable that a second, or central, or "hour-glass contraction," might then take place? The morbid irritability of the os uteri might, in this case, excite

a corresponding state of the circular fibres in some other portion of the organ: this would sufficiently explain all the phenomena, and all the difficulties subsequently met with. That a central contraction sometimes takes place in other viscera, possessing both longitudinal and circular fibres, is generally admitted. In examining a dead body, I lately met with a true hour-glass contraction of the stomach, which gave it, externally, the appearance of two distinct cavities, and, which, as it yielded to the slightest force after death, could not result from natural structure, but was probably the effect of violent spasm during life. I think it is clear that the full dilatation of the os uteri, is by no means a *sine quâ non* in the production of "hour-glass contraction," but that it may take place either after, or at any time during the progress of parturition. With regard to the case related by me in your journal, I may say, that if I wished to give a delineation of the shape of the uterus as I then felt it, I would select as a good specimen the second or imaginary figure in Sir John Chapman's woodcut. In that drawing, No. 2, of the second figure, correctly points out the central contraction which I then described; the only alteration required would be, that No. 4, the os internum uteri, should be represented as in a state of dilatation. The above remarks are made with great deference to the opinions of an experienced accoucheur, and are only intended to show, that what Sir J. Chapman styles a hypothetical case, is sometimes an actual occurrence.—I have the honour to be, sir, your most obedient servant,

WILLIAM ILOTT.

Bromley, Kent,  
June 14th, 1830.

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#### PROPOSAL OF TAXING THOSE ENTERING THE MEDICAL PROFESSION.

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*To the Editor of the London Medical Gazette.*

SIR,

PERMIT me to offer a few observations in answer to "A Well-wisher to the Gazette." The only argument which that gentleman has opposed to my state-



ments, is, that I should have quashed a great many geniuses. I confess nothing could be further from my wish, and if for a moment I could suppose such would be result of my plan, I should agree with you that it was highly impolitic. But I cannot conceive that genius is confined to any particular sphere of life, either high or low: at the present time, many of the more respectable part of the community—among whom talent is quite as abundant as it is in any rank of society—are prevented from bringing up their sons to this “noble profession” in consequence of the bad prospects which, in a pecuniary point of view, it affords. If my scheme were to be adopted by government, genius from the higher and more educated classes would condescend to enter our profession, just in proportion as genius from the lower and more ignorant were excluded. There does not at present appear to be any want of talent in the law, and I apprehend there would be none in physic. Therefore I am inclined to repeat my belief, that we ourselves and the public in general would be much benefitted by placing such a fine on persons entering on the study of medicine, as would deter any from undertaking it who had not had the opportunity of attaining a good previous education, and who were not capable of purchasing those advantages by which alone a competent knowledge of it can be acquired. With regard to rancour, I beg to assure your correspondent that, as far as I know myself, I am actuated by none but philanthropic motives; indeed, if he will take the trouble once again to peruse my former communication, he will perceive that it does not relate to the present race of students, but rather to provide that the future shall be such as may pursue their studies with comfort and credit to themselves. In answer to the very pretty hyperbole about peers and marquesses, I would simply state, that my object is only to exclude beggars and vagrants.

I am, Sir,

Your obedient servant,  
A SURGEON AND APOTHECARY,

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## METROPOLITAN SOCIETY OF GENERAL PRACTITIONERS.

*To the Editor of the London Medical Gazette.*

SIR,

THE committee of the Metropolitan Society of General Practitioners in Medicine and Surgery request the insertion of the enclosed Prospectus in the medical intelligence of the ensuing number of the London Medical Gazette.—I have the honour to be,

Sir,

Your most obedient servant,

WM. GAITSKELL,  
President.

June 9th, 1830.

*Prospectus of the “Metropolitan Society of General Practitioners in Medicine and Surgery.”*

While almost all public bodies, whether professional or commercial, form associations, corporations, or companies, for the purposes of legislating for their mutual protection and for the advancement of their prosperity; it is found that no association of the numerous class of medical men comprehended under the term *General Practitioners*, has yet in any manner been formed for the protection of their particular interests.

Various branches of the medical profession have colleges, charters, and corporations, from which the General Practitioner is either altogether excluded or attached as an appendage only; he is not admitted to a participation in their *Councils*, or to share in their honours; as a General Practitioner he belongs exclusively to no one branch, and is, therefore, virtually excluded from all.

A Society has therefore been formed, entitled “The Metropolitan Society of General Practitioners in Medicine and Surgery,” which is intended as an union of the practitioners of this class throughout England and Wales, for the protection of their mutual and individual interests; having the following objects:—

1st.—Such alteration of existing laws and customs as shall promote the prosperity and respectability of the general body of practitioners.

2d.—The adoption of such measures as may be conducive to the advancement of medical science and of professional information.

3rd.—The periodical assembling of the members for literary and scientific discussion—for the cultivation of social intercourse—for and for the consideration of general measures relative to the Society.

4th.—The creation of a fund to be appro-

priated to the protection of the members, and for the general exigencies of the Society.

5th.—The establishment of a *benevolent* fund, by contributions from members of the profession at large, and other charitable persons, for the relief of distressed medical men and their families.

The limits of a prospectus will not allow of a full detail of the objects contemplated; but it may be observed, in addition to the foregoing general statement, that it is intended, as soon as practicable, to effect some regulation respecting the mode of professional compensation; and, if necessary, to procure a legislative enactment to authorize the General Practitioner to make a fair and open charge for his services. It is also intended to protect, individually, those members who may become involved in questions which may be considered by the Committee to affect the interests of the Society as a body.

Notwithstanding that there are numerous charitable funds for relieving distressed members of particular branches of the medical profession, it is found that there are many members of that profession who are not objects of relief from any of those funds; and it is, therefore, to supply this desideratum, that the plan of a General Benevolent Fund has been adopted, the application of which, it is intended, *should not be confined to this Society exclusively*, but should be extended, at the discretion of the Committee, to every member of the profession.

The affairs of the Society are under the management of a President, Vice-President, and a Committee.

A house, or chambers, will be engaged, as early as possible, for the use of the Society.

The Society will meet at such stated periods, and in such manner, as will be hereafter determined.

The foregoing is a brief statement of the views of the founders of this Society, and of the advantages intended from its institution, the plan of which may be enlarged, or curtailed, according to the support it may receive.

The Committee of management entertain a confident hope that the Society will be of great utility to the general body of Practitioners, whose attention to this subject is earnestly recommended.

WILLIAM GAITSKELL,  
President.

## MEDICAL GAZETTE.

Saturday, June 19, 1830.

“*Licet omnibus, licet etiam mihi, dignitatem Artis Medicæ tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso.*”—CICERO.

### THE LONDON UNIVERSITY.

WE last week inserted a letter from Dr. Conolly, Professor of Medicine in the London University, in answer to some observations which, it may be within the recollection of our readers, we had made in the number immediately preceding (June 5). Although we by no means wish to identify the learned Professor with the proceedings to which we object, yet as he has stepped forward as the champion of the school to which he belongs, we can scarcely do otherwise than consider his remarks as embodying the opinions of those from whom the measures to which we object have emanated.

The observations made by Dr. Conolly, in answer to our comments on the London University, may be reduced to distinct propositions, which we shall consider in the order of their occurrence; and, first, that our remarks on the general state of the University are founded on incorrect data.

Now as we made several remarks of a general nature on the state of the University, we are rather at a loss to know which of these Dr. Conolly holds to be founded on data so incorrect that he not does “think it necessary to confute them.” We asserted that the fate of the establishment seemed to hang on that of the medical school—and is not this the case? Do not the medical pupils amount to nearly one-half of the entire number of those who have enrolled their names, including all the various departments of literature and science? The University opened with the medical classes—they continue to take the lead: in this department were honours first given, and are diplomas now proposed to be bestowed.

\*\*\* It is requested that all applications and communications be made and addressed, post paid, to “Mr. W. Senhouse Gaitskell, Solicitor, 21, Stamford-Street, Blackfriars.”

These are unquestionably sufficient indications of the importance attached to this department by the founders of the institution; while it is apparent, from the report of the Warden, that it is the only branch of the undertaking which has realised the hopes of the proprietors. The Council "do not conceal that they expected there would have been a larger increase in the classes of general education in the present session \*."

Another remark on the "general state" of the school referred to the pupils, and implied that the University was least estimated where its advantages and disadvantages were best known. The datum on which we founded this assertion was the number of students from the metropolis and provincial towns respectively: the proportion of the latter to the former among those in the medical classes who obtained medals being as nine to one; "for," again to quote the words of the Report, "a large proportion of the resident population of London, for whose benefit the institution was principally established, have yet to learn the advantages which are within their reach." Does this admit of refutation?

Then as to the "general state" of the Professors, we asserted that dissensions prevailed among them: is this, too, founded on "insufficient data?" Is it not true that the pupils have addressed remonstrances to the Council against the insufficient instruction afforded them on some branches of medical science—and that some of the Professors themselves have memorialized against each other? Are there not manifestoes—printed manifestoes of the most violent description—in existence, which, though "AT PRESENT" they be intended only for the Professors and the Council, are yet, nevertheless, likely to meet the public eye? Is it not true that the Professor of Physiology and Surgery

has resigned, and that the University has thus lost a man whose name was known to his country and to Europe, and whose matured reputation as a teacher gave to the school a precocity of development which there is no reason to suppose it could otherwise have obtained? Is it not true that other resignations are impending, and that the University is threatened with the loss of some of the most popular teachers who remain? In short, that there are two contending parties, one or other of which must give place; and that at this very moment anarchy reigns, where it is essential for the interests of the school that mutual good feeling and cordial co-operation should prevail? If these things be true, then is our statement borne out;—if otherwise, then should not an hour be lost in contradicting them in such a way as to satisfy the public that reports so general, and so generally believed, are, in reality, without foundation.

So much for our *general* statements, which it is not thought necessary to confute. We now come to consider Dr. Conolly's answer to our arguments against the propriety of the London University granting diplomas in medicine and surgery; and the first of these consists in endeavouring to shew that we have "viewed this subject merely with reference to its possible effect on teaching, as a trade."

The manner in which the learned Professor endeavours to establish this position, is by a general reference to the medical schools in London; which, he says, afford opportunities inferior to those of Paris, Edinburgh, Glasgow, and Dublin;—a circumstance which he attributes partly to the imperfect preliminary education of the English student, and partly to the peculiar regulations of the London schools. Now these observations are not without some justice, though they are too strongly expressed, and the disadvantages of

\* See Report presented at the General Meeting, Feb. 4, 1830.



the London system, as compared to the others, much exaggerated. Granting them, however, in their fullest extent, it remains to inquire what the London University has done to obviate this "attempt to crowd so many pursuits into so small a space?" So strongly impressed with the existence of defects, and so well acquainted with their cause, have the Council taken the high ground of legislating according to the necessities of the profession; and by establishing more protracted courses of study, removed the evil of the prevalence of which they complain? Have they chalked out a better plan of education? Have they required that young men, in order to obtain the necessary certificates from them, shall have attended lectures during *three* seasons, instead of crowding all into "two successive winters?" They have not. They have most scrupulously squared their courses of study, so as to accommodate them to the regulations of the College of Surgeons and Society of Apothecaries; and whatever "crowding" there was before, remains unaltered. Does not Dr. Conolly fear that his charge against us may be retorted, and that the Council, in framing their regulations, are open to the suspicion of having "viewed this subject merely with reference to its possible effect on teaching, as a trade?" We do not blame the London University for not having made their courses of study of longer duration; we merely object to its being urged in their defence that *we* have viewed the subject of teaching too much as a trade, when it is thus apparent that it is by this rule that *they* themselves have been guided, though, as it would appear, against their conviction of its propriety.

It is stated, and with too much justice, that the practice of physic is generally more neglected than the rest; and that, in preparing for their examinations before the College of Surgeons and Society of Apothecaries, pu-

pils "are not accustomed to pay much attention to medicine." Now, admitting that practical medicine is not cultivated so assiduously as it ought to be, we hesitate not to assert that it is much more diligently pursued than it was a few years ago; that the system of education has been very greatly improved; and that this favourable change is exclusively to be ascribed to the meritorious exertions of the Society of Apothecaries and of the College of Surgeons.

In answer to our objections to the plan of giving diplomas as an assumption of dignity for the benefit of their own particular school, Dr. Conolly declares that he should be glad if the physicians and surgeons of hospital schools were to do the same. Is Dr. Conolly in earnest? Does he really think it would benefit science, or that it would not be looked upon as a burlesque, and bring all such designations into contempt, if every five or six private lecturers were to confer diplomas and constitute "Masters" of medicine and surgery at their several schools? Yet, is there nothing intrinsically more ridiculous in this being done by them than in a joint-stock company taking the appellation of an University, and assuming a privilege which, whether it be proper or not that they should possess, has never, in this country at least, been accorded,—except to bodies incorporated by royal charter.

Again—Dr. Conolly says, with something like indignation, "you insinuate that we wish to interfere with the College of Surgeons." Now we *insinuated* nothing, but we broadly stated, and we repeat, that if the proposal of granting diplomas be carried into effect at the London University, it will have a tendency, direct, obvious, and unequivocal, to injure that body. We called upon the Council of the College of Surgeons to look to the interests of their department of our profession, and we again call upon them to do so. If Dr.

Conolly had maintained that the London University had a right to grant diplomas in surgery, and that any injury which might thus be inflicted on the College of Surgeons was a contingent evil of minor importance as compared to some proposed public advantage—we say, that had he taken this ground, although we should still have differed from him in opinion, we should have at least admitted the plausibility of his doctrine. But when we find him stating, not only that they have no wish, but that it is their “most anxious desire” to avoid interfering with the College of Surgeons, at the very moment that they promulgate their intention of conferring diplomas in surgery—we can only say that the learned Professor is complimenting his colleagues on their disinterestedness at the expense of their sagacity. Probably a more singular method of exhibiting “an anxious desire to avoid interference” never before occurred to the imagination of any one; and we greatly fear that, as human nature is constituted, men will still judge of the motives of others by their actions rather than by their professions—by what they do, rather than by what they say. But there is an obvious and simple method of removing all suspicion on this head: it is said by Dr. Conolly, that to become a Master of medicine and surgery in the London University, *more* is required than to pass the examination either of the College of Surgeons or Society of Apothecaries. Now such being the case, let the gentlemen in Gower-Street make it imperative, that any one, who would be a “Master,” shall first have gone through the ordeal at Lincoln’s-Inn-Fields or Blackfriars respectively, and the world will at once acknowledge their disinterestedness, and the sincerity of their wish “to do all the good which is in their power to do, and in the least objectionable way.”

These are the chief points in the letter of

the learned Professor; and if our impression be that he has entirely failed in answering our objections, we are not less convinced that this depends upon the weakness of the cause, not the lack either of zeal or talent in the advocate. Other circumstances, indeed, are incidentally alluded to, but they are admitted to be of little importance. Thus our expression of disappointment at the appearance made by the Professors at the public distribution of honours, is answered by remarking that they had little to do, and that they “had been doing their duty during a long session, then just concluded,” which, we presume, we are to understand as a deprecatory reference to their previous fatigues, and an apology for the slovenly manner in which they slurred over the concluding scene.

In conclusion, it appears to us that Dr. Conolly has failed to shew in what the London University is superior to other medical schools, a circumstance which we should never have thought of adducing as a reproach, had their pretensions borne a fair proportion to their merits. But when we find them putting forth, *ad captandum*, manifestoes—offering certain high-sounding titles and designations to their graduates, till they “can give a Physician’s degree;”—when we find them taking to themselves the credit of fulfilling the “great duty” of providing a fit education for the General Practitioner, they having, in fact, like every other private school, merely conformed to the regulations of the Society of Apothecaries; then have we a right to inquire into the foundation of these high claims;—and when, further, we observe the grandiloquent phraseology, so obviously adopted “to tickle the ears of the groundlings,” we feel called upon to denounce a system for which we can find no gentler appellation than that which we bestowed upon it in our former article.

Not only, however, has the University

failed to present the superiority of education which their proclamations would lead us to expect, but their very establishment is destitute of the most essential requisite of every medical school,—an hospital. It is an evil alluded to by Dr. Conolly—and which we readily admit—that *medicine* is not sufficiently attended to by the rising generation of practitioners ;—but at the same time, it is an evil which the London University is incapable of remedying within the precincts of its present establishment, for it is impossible that medicine, as a practical science, can be taught without a constant reference to the chambers of the sick, any more than chemistry can be taught without apparatus, botany without plants, or anatomy without bodies.

Here, then, with all respect, we take our leave of Dr. Conolly, and request him to believe that it is not without regret that we have thus spoken of the institution whose cause he has stepped forward to defend. If our observations tend to shew those who manage its affairs that the public will not go with them beyond a certain point, and that they are now at a very critical moment of their existence as a school, we shall not in vain have performed the ungracious task of censuring, where it were far more agreeable to praise. Our censures, perhaps, may be despised, and our commendations held to be without value ; but at least it is proof of our sincerity, that we fostered the infant efforts of the University, at a time when it was doubtful whether it would live to display the errors we lament in its youth, but which we still hope to see redeemed in its maturer years.

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#### THE KING.

ABOUT eight or ten days ago a very important change began to manifest itself in his Majesty's symptoms: the diuretics, which had so long been inert,

at length came into full operation, in consequence of which the dropsical effusion rapidly diminished, and the respiration became proportionably improved. This event, which we not unfrequently witness in such cases, after the most active remedies have for weeks seemed altogether inefficient, has excited so much astonishment in the public mind, that a variety of absurd and contradictory explanations have been offered to account for it. One is, that an abscess had burst in the chest, and the matter been expectorated,—another, that his Majesty never had dropsy at all,—and a third, that the relief had been produced by a surgical operation—“ an incision in the chest, in the region of the heart,” by which the water was removed. None of these rumours are founded in fact, and the circumstance which we have above mentioned renders the case sufficiently intelligible without them. The operation of puncturing the chest is one occasionally performed for the evacuation of fluid within the chest, and which has recently been practised at several of the London Hospitals. We mention this because it must serve to convince those who have suggested this measure to his Majesty's attendants that the idea must have been familiar to their minds, and would, no doubt, have been adopted, had the nature of the case rendered it advisable. It is very seldom, however, that in cases of dropsy such an expedient can be admissible. Indeed, it is only where there is a circumscribed collection of fluid, unattended with organic disease, that any encouragement is held out for its performance. In a case of this kind, which we attended a few weeks ago with Mr. Lawrence, a collection of fluid within the chest was evacuated by puncture, and the gentleman speedily recovered ; but some idea of the general result of this operation, if adopted at all indiscriminately, may be



formed from the fact that in the practice of one of the most experienced physicians in London it has succeeded once only out of twelve times.

It is curious that it does not strike those who inundate the palace with proposals for his Majesty's relief, that their suggestions proceed upon the improbable supposition that they who do not know the exact condition of the royal patient should be better able to minister to his disease than the experienced and skilful men who are constantly with him. Nay, some have insinuated that the nature of the disease itself had been altogether mistaken; founding this imputation on the very extraordinary grounds of his Majesty having obtained so much relief, when all hope seemed to be nearly at an end;—but they forget that, by how much the more unexpected the favourable change, by so much the more does it shew the excellence of the treatment; for a single false step in an individual labouring under the symptoms which his Majesty is acknowledged to have had, could scarcely have failed to prove fatal.

But it has very naturally been inquired why the physicians have not given a specific name to his Majesty's complaint—why they have not spoken in language more familiar to the public ear? Let it be remembered, however, that they are not the only parties concerned, and that there may exist obstacles to more explicit communications, such as they are unable to overcome. The confidence which, even in private life, professional men are accustomed to hold sacred, may here be strengthened by express declaration of the Royal will. Nor can those who regard the circumstance we have just hinted at with an impartial eye, find any difficulty in accounting for the absence of more detailed information in the bulletins,

without imputing either a disregard of public opinion or any other dereliction of their great and most responsible duty to those talented and honourable men, to whom, and to whom alone, by his own special desire, the care of the sovereign has on this occasion been confided.

With regard to the prospects of the future, held out by the change in the symptoms which we have above described, we lament to say, that the mere disappearance of the effusion does not by any means justify the sanguine hopes which some have entertained;—the evacuation of the fluid can only give temporary relief, while the organic cause which produced it remains behind. We are under the painful necessity, too, of contradicting the statements about his Majesty's returning appetite and improving strength:—though they have been current in the highest circles, and given on the authority of those who might be supposed to be well informed, yet are these reports lamentably exaggerated; and so far from being able to walk across his room, or to breakfast on “broiled chicken,” we know that two days ago his Majesty continued in the most urgent state of debility, and that his sustenance almost exclusively consisted of clove-tea, and caudle with a little brandy. Till, therefore, there be more decided renovation of the vital powers than has yet been manifested, we greatly fear that the confident anticipations of the King's permanent recovery, which are in circulation, must be looked upon as indicating the ardent wishes of his people rather than the reasonable hopes of his attendants.

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#### THE COURIER.

THE Editor of the Courier, in his journal of last Saturday, expresses some astonishment that we should have represented him as having fallen into the

error of supposing that Sir Astley Cooper had been superseded in his attendance on the King, and conjectures that the mistake may have been owing to a "humorous story" about Sir Astley, which he had inserted a few days before. If the Editor takes the trouble to refer to the *Courier* of June 5th, he will find these words:—

"*The King's Physicians.*—Some violent articles have appeared lately in the *Lancet*, on the subject of Sir Astley Cooper's absence from Windsor, and the substitution of Mr. Brodie. To these, replies have been made in the *Medical Gazette*."

Now we submit that this justifies the inference which we drew from it—the Editor must have forgotten what he had previously written.

#### CALUMNY AGAINST ONE OF THE SURGEONS OF CANTERBURY.

(*From the Kentish Gazette.*)

IN our publication of last Friday, we copied from the *Kent Herald* an article, which originally appeared in the "*Lancet*," reflecting upon a highly respectable medical practitioner in this city. We have since heard, on the best authority, that the whole matter is most grossly misrepresented, that the offensive gloss is entirely false, and that the real facts reflect no imputation whatever upon the conduct or character of the gentleman alluded to, either professionally or otherwise. Under these circumstances, we take the first opportunity of declaring our present conviction of its gross inaccuracy, thorough falseness of character, and malignity, and our regret at having been instrumental in its circulation.

#### STAMPS ON MEDICINES.

MR. HOBBHOUSE lately presented a petition from a respectable body of chemists and druggists in London, against the stamp duties on certain kinds of medicines. It appears, by what fell from the Chancellor of the Exchequer, that there is every disposition on the part of government to remove the annoyance to which the parties have been subject, and that con-

siderable alterations are to be made in the schedule for that purpose. Soda water, for instance, is hereafter to be free from any tax.

The petition was ordered to be printed.

#### ROYAL INSTITUTION,

Friday, June 4, 1830.

GEORGE MOORE, ESQ. F.A.S. VICE-PRESIDENT, IN THE CHAIR.

#### *On the Perception and Application of Colour.*

MR. BROCKEDON, by whom the discussion was introduced, very justly observed, that, although it less frequently excites attention, the perception of colour by the eye is as often false and imperfect as the perception by the ear of sounds, without referring to extreme instances in either case (such as when a boiled lobster and a leek are believed to be both the same in colour, or when the song of the nightingale and the braying of an ass are equally agreeable, of which examples are not wanting; for it will be remembered that the quaker Dalton put on scarlet stockings, unconscious that they differed from his ordinary quiet drab; and a learned physician, now alive, has a soul so little attuned to harmony, that he says of music, "*it does not disturb me*"). There are numerous eyes which would seem to form very imperfect judgments of the harmony of colour. In the works even of some of the most celebrated artists this defective perception is apparent; and hence have we landscapes as green as a leek, and others all in a blaze, as if they had been painted during a general conflagration. Mr. B. was anxious to investigate the cause of these peculiarities, and argued that the doctrine of complementary colours threw some light thereon. The common optical experiment of looking intently, for some time, at a red, or blue, or yellow wafer, until the eye becomes fatigued, and then blowing it off the sheet of white paper, and the spectrum still appearing to remain, but of a different colour—green if the disc had been red, purple if it had been yellow, &c. &c.—was illustrated by some interesting experiments with moveable diagrams, which were so constructed as

to shew the complementary colours, and the different shades thereof, to every possible variation of hue and tint; and it was stated that they would be of much service to artists, manufacturers, &c. in guiding them with certainty to the most agreeable combinations of colours, whether in the painting an historical picture or the not less important matter of deciding on the tints to be blended in a lady's dress. Mr. Brockedon observed, that the peculiar richness of landscapes in Italy, the warmth in hue of their stone buildings, as depicted by the Italian masters, as compared with the same objects in England and northern countries, depended in a great measure on the adventitious hues they gain from the complementary colours; and this arises from the eye, in those cloudless climes, being exposed to so great an expanse of clear blue, when its complementary colour, red, is consequently transferred to the ground and buildings.

The physical cause of complementary colours is but little known, and on this subject Mr. Brockedon offered an hypothesis of his own. It is proved that the diffraction of the rays of light occasioned by its falling on a surface set with an infinite series of minute parallel lines, will give to that surface all the prismatic hues; and as the tunica Jacobi of the retina, as drawn from microscopic observation by Mr. Bauer, appears to be constructed of very minute parallel, or nearly parallel fibres, it was inferred that this membrane would in like manner diffract the rays of light, and give rise to the phenomena in question.

There were two very ingenious instruments exhibited, *viz.* the chromometer, and prismatic lens, both invented by Mr. George Field. The first consists of three hollow glass wedges, which can be filled with coloured liquids; and there are graduated scales attached, by which the intensity of each primitive colour which enters into the composition of the secondaries, can be at once ascertained.

The lenticular prism, or prismatic lens, is, as its names import, an instrument in which the powers both of the lens and prism are conjoined; it is, in fact, a portion of a prism ground into a lens, yet still retaining its triangularity, although it be reduced to a cone. Its powers are much greater than either

the lens or the prism separately used; and the analysis of light, which, according to Sir Isaac Newton, gave by the prism seven primitive colours, becomes by this instrument immediately reduced to three, *viz.* blue, red, and yellow, which are thus practically proved, what they have often been surmised to be, the true elementary colours; for the instrument will immediately reduce orange, green, or any secondary or tertiary colour, to its primitives, but the true primitives resist all further analysis. An experiment was mentioned in which Mr. Field had succeeded in throwing upon one eye a *blue* ray, and upon the other a *yellow* ray, when the resulting perception was green; and Mr. Brockedon, in pursuing this experiment, had ascertained, that if two phials, one with a blue and the other with a yellow or red liquid therein, were placed before the eyes, not only the primitive and secondary colours were perceived, but their complementary ones also; forming the extremes of the field of vision. These instruments are so extremely curious, and some of the experiments throw so much light on the science of optics in general, and the physiology of vision in particular, that we may probably be induced to give, at some future time, a more detailed account of their construction.

#### *Homœopathic Dispensary, &c.*

In the library were some very admirable copies of celebrated pictures from the old masters; a very numerous series of *confervæ*, lichens, mosses, &c. from Mr. Burnett's botanical collection; several cases of American and other insects; specimens of pure nickel; and some rare chemical products; with a complete homœopathic dispensary, according to the system of infinitesimal doses, as advocated by Caspari and others. The phials are not much larger than peas, and each contains several hundred doses; indeed medicine enough for a city or an army might be carried in one's waistcoat pocket, or a complete apothecary's shop be packed in a modern snuff-box. The only *reasonable* inference we can draw from the homœopathic doctrine is, that the *less medicine* a man takes the better.



SPASMODIC AFFECTION OF THE  
JAW.

To the Editor of the London Medical Gazette.

SIR,

THE annexed is a case which occurred in the practice of A. Roberts, Esq. practitioner in Brighton, and if it meet your approval, the insertion of it in your valuable journal will oblige your obedient servant,

GORDON GWYNNE.

Sussex County Hospital,  
June 14, 1830.

Miss S. æt. 13, was seized on the 16th May last with loss of power of opening the lower jaw, having during a paroxysm of laughter suddenly closed her mouth, from which time she was unable to open it, or to move it in any direction whatever. At the moment the mouth closed, she heard something "snap," as she expressed it. The teeth being closed in their natural position, but little pain or inconvenience was experienced, except under the zygomatic process of the right side, where a sensation of firm muscular contraction, attended with tension and rigidity of the parts affected, was experienced.

Supposing it to be a spasmodic contraction of the muscles of the jaw, she was directed to apply warm fomentations, and the camphorated liniment, with opium, to the face. These means were arduously persevered in the whole of that day, the 16th, and night, apparently without any good effect. On the morning of the 17th a fluid aperient was administered by the mouth, it being impossible to put any solid substance between the teeth. Leeches were applied to the part that suffered from muscular tension: she was directed to try the warm bath, and to continue the fomentation.

No beneficial effects arising from the warm fomentations, she was ordered to discontinue them, and apply cold lotions freely to the part. On the night of the 17th she slept well, but on the morning of the 18th, no benefit being derived from what had already been done, it was resolved to try the effect of galvanic influence. A moderately strong battery was prepared, which, after giving a few shocks, restored the parts to their natural action.

This young lady experienced a somewhat similar deprivation of motion of the lower jaw about four months ago, which, by giving it mechanically a blow with her hand, motion was immediately restored.

The mischief was, on both occasions, confined to the right side.

*Observations.*—Whether this was a case of spasmodic tetanus, or whether occasioned by a sudden alteration of the natural po-

sition of the interarticular cartilage of the joint, thereby occasioning a temporary locked jaw, I will not take upon myself to decide. The time, from the commencement to the termination, was, you will perceive, eight and forty hours; during which time a routine of measures were tried without deriving any apparent advantage; still, a right view being taken, with persevering treatment the disease was got under control, and in all probability the life of the patient saved. There was throughout an extensive contraction of the muscles of voluntary motion, principally the tempora's and masseters. The muscles of deglutition or respiration were not in the least affected.

G. G.

[*Query.*—Was not the above merely a case of hysteria?—E. G.]

## HOSPITAL REPORTS.

## EDINBURGH ROYAL INFIRMARY.

*Enlargement of the Isthmus of the Thyroid  
Gland—Removed.*

JOHN ROBINSON, æt. 47, admitted under the care of Mr. Liston, February 8th. There is a tumor, larger than a goose's egg, situated immediately over the thyroid gland, and evidently connected with its isthmus. It is extremely hard and irregular on its surface, but is not painful when touched: it appears to be adherent to the trachea, and does not admit of much motion. The voice is considerably impaired, and the breathing is much impeded, inspiration being difficult, and attended with a loud wheezing noise. On making any, even slight exertion, the dyspnoea is much increased; and on ascending a height quickly, or even remaining for some time in a stooping posture, it amounts almost to suffocation; it is also aggravated by exposure to damp. He complains of no pain in the larynx or trachea, and no uneasy sensations are produced by pressure. Expectoration is natural, and his general health good.

States, that about three years ago he observed a minute induration in the situation of the present tumor, and that it gradually increased in size, unattended with pain. Some time ago a seton was passed through the substance of the tumor, in a provincial hospital, and the swelling has since become more dense and less moveable than formerly.

10th.—To-day Mr. Liston surrounded the lower part of the tumor with two semicircular incisions; and, dissecting cautiously beneath its base, detached it from its more loose connexions, not interfering with the central portion and its adhesions to the trachea. During the progress of the dissection, the blood flowed most profusely both

from arteries and veins, but was restrained by securing the former with ligatures, and compressing the latter with sponge. An armed needle was then passed through the centre of the tumor, as close to the trachea as possible, and the remaining attachment was enclosed by the separate portions of the ligature firmly applied.

Mr. Liston stated that he had undertaken the operation with no intention of removing the tumor by the knife, but had determined to separate, by dissection, only its more loose attachments, and afterwards to enclose the more firm and vascular part with strong ligatures; that even in this way a very considerable quantity of blood had been lost; that if the operation had been finished by means of the knife, the patient might have sunk before the hæmorrhage could have been arrested, it being impossible to apply any great degree of pressure in that situation; and that the separation of the tumor, though more tedious, would be equally effectual as its removal by a cutting instrument, and at the same time unattended with danger.

11th.—There has been slight venous hæmorrhage from the wound, easily restrained, however, by the application of cold cloths. The tumor is flaccid, and of a dark colour.

12th.—There has been no further hæmorrhage. Poultices are applied to the tumor; it is of a dark livid hue, exhaling the offensive odour peculiar to gangrene, and discharging a thin serous fluid. The patient makes no complaint excepting of general weakness, and being annoyed with the disagreeable effluvia proceeding from the gangrenous mass. Ordered wine and light nourishing food. Powdered charcoal to be applied to the neck.

15th.—The ligatures were tightened, having become slack in consequence of the shrinking of the tumor, which is now soft and of a deep black colour; the exposed surface around its base is occupied by florid granulations, discharging healthy pus.

17th.—The ligatures have separated, along with the sloughs which they enclosed, and the sore is of a healthy appearance, though rather extensive, on account of the divided integument having retracted considerably.

On the 19th inflammation occurred in the lower part of the neck, with threatening of abscess. An incision was made into the tense part.

Afterwards he recovered strength rapidly; the sore continued to form healthy granulations, and gradually diminished in size. On the 22d of March cicatrization was accomplished, and the patient declared that his respiration was equally free as previously to the appearance of the tumor. He was dismissed cured.

## ST. THOMAS'S HOSPITAL.

### *Disease of Bursa Patellæ.*

PHILLIP TININ, aged 47, a seaman, admitted on the 1st of April into Henry's Ward, under the care of Mr. Travers, with a large circumscribed swelling situated over the patella. About eleven months ago he received a blow upon that bone, which was followed by a good deal of pain, and in a few days after he perceived a preternatural enlargement. Application was made to a medical man, who gave him a liniment to rub into the part, but no benefit was derived from this mode of treatment; the swelling continued to enlarge for some time after, when at length it became stationary, and being free from pain he was able to resume his employment. Having struck the knee several times since, and each being followed by an increase in the size of the tumor, he was eventually obliged again to give up his occupation, and was employed as a scavenger in the streets of Deptford; but in this department he has also been incapacitated, the complaint having latterly increased, which prevented free motion of the joint, and also gave considerable pain in walking. It has rather an yielding feel on pressure, but it rises again when this is removed, and there is but little pain unless the pressure be firmly applied. He was directed to have the surface of the swelling blistered, so as to set up inflammation and produce suppuration, when, as Mr. Travers observed, it might be laid open. On the 14th, a second blister was applied, which was afterwards kept discharging by savine cerate. He now complained of more pain on pressure, which was referred to the bottom of the swelling. On the 23d, having become more soft, a small incision was made, but nothing escaped farther than a slight quantity of blood. A poultice was afterwards applied.

May 6th.—The poultices have been continued, but little or no alteration has taken place. A free incision was now made longitudinally, taking the same course as the former, and to the whole extent of the tumor. A good deal of fætid matter followed. The poultices to be applied as before.

10th.—There is a slight diminution in its size, and the wound dressed with simple dressing and adhesive plaister, over which a poultice is applied. Flexion and extension of the limb at the knee-joint can be performed with more ease, and there is less pain on pressure. On the 20th the swelling was much reduced; the wound still discharged offensive matter. Strapping, simple dressing, and poultices as before.

June 2d.—He can now walk about, and bend the leg with ease; has no tenderness on pressure worth mentioning, and moving the patella in different directions does not

give pain ; but very little unnatural swelling remains, and the wound is nearly healed. Nothing but strapping is applied, and a roller around the knee.

### ROYAL WESTMINSTER OPHTHALMIC HOSPITAL.

#### *Cases of Amaurosis treated by Strychnine.*

WITHIN the last few years, medicine has received many valuable additions through the aid of chemistry, and amongst the most important of these may be reckoned the vegetable alkalis. All the proximate principles appear to possess, in a very condensed degree, the powers of the substance from whence they are derived, and by the smallness of the dose required, from the removal of every thing that is inert, they not only sit more easily on the stomach, but are equally efficacious, and their mode of administration much more convenient. The most important of these appear to be the Quinine, Morphina, and Strychnine ; all of which are combined in their natural state, with a vegetable acid holding them in solution. In the latter, this has been denominated by Pelletier and Caventon, *igauric acid*.

As the old adage is, *ubi virus, ibi virtus*, so with respect to the *Nux Vomica*, since it is one of the most deadly of poisons : more seems to have been expected from it—its effects seem to have been watched with the greatest care by several medical men. And with reference to the cases where it has been very beneficial, those recorded by Dr. Bardsley, of Manchester, appear to be drawn up with the greatest care and candour. His first trial of it was in paralysis ; previous to this he speaks of its general effects as noticed by Magendie, Delile, Orfila, &c.—viz. that the Strychnine does not occasion any organic lesion in the animal frame, though it has a direct action on the nervous system, causing death from asphyxia, produced by the immobility of the chest during the violence of the tetanic spasm of the thoracic and abdominal muscles.

From the general effects, then, of Strychnine, particularly as related by Dr. Bardsley, in cases of paralysis, there was every reason to hope it might act most beneficially in cases of amaurosis ; it will be seen, however, by the following cases, that in only one instance did that effect take place. As the value of a remedy can only be truly appreciated by unsuccessful results being published as well as the happier effects, these cases will not perhaps be without their use.

CASE I.—Feb. 9th, 1830.—William Long, ætat. 42, of short stature and plethoric habit, by business a baker. He says that two years since, whilst in the enjoyment of perfect health, he perceived the sight of his right eye to become gradually dim ; he was unable to distinguish objects clearly, and at the

expiration of 12 months was very nearly in a state of complete blindness with his right eye. About this period his left eye became similarly affected ; he had slight dimness in the first instance, attended with some degree of pain in the head. The dimness has gradually increased, so that he is now only able to distinguish light from darkness, or ascertain the shadow of his hand when held at a short distance from him, and even this can only be accomplished when the light is very powerful, as in the morning, for in the evening, he states, he is always worse. The pupils are rather dilated, and act sluggishly ; iris brown ; the appearance of eyes perfectly natural. He has been under medical care for some time, and has been cupped, bled, and blistered repeatedly, without benefit.

Empl. Cantharides cuique tempori.

11th.—The blister to be disused, or rather to be rubbed with six grains of spermaceti ointment, containing a  $\frac{1}{4}$  gr. of strychnine, and to be repeated every other morning on the blistered surface.

15th.—Has not found the slightest change since adopting the present plan of treatment, with the exception of a diminution of his occasional head-ache. The surface to be sprinkled this morning with a quarter of a grain of the strychnine.

Feb. 22.—This plan of treatment has been made use of every other morning. He has entirely lost the pain and dulness in the head. Right eye entirely blind ; no change in the left. Bowels regular ; general health good ; has not perceived any effect from the strychnine.

March 1st.—Is not in any degree worse than on admission, nor better. He has not suffered from any twitching or pain in his head. For two hours last night he had the appearance of a "volume of flame" before both eyes, but was unable to distinguish any thing.

8th.—He has not perceived the slightest difference this week.

10th.—R Sulph. Strychniæ, gr.  $\frac{1}{8}$ , bis in die.

15th.—Has found no effect from the medicine. No giddiness, pain, or twitchings.

Rep. Pil. ter die.

17th.—During the last two days he has felt frequent and sudden twitchings commencing in the ankle, shin, and knees. No pain in the head. Eyesight the same.

Rep. Pil. ter die.

22d.—On the 20th he took six of the pills, when he suffered from much pain across the forehead and twitching in the eye, but this was not attended by any increase of vision. Finds his eyes gradually becoming worse. Health good ; does not suffer any inconvenience from the medicine ; complains of his eyes aching.

Rep. Pil. gr.  $\frac{1}{4}$  ter die.

25th.—No better. Ordered by Mr. Guth-



rie, C. E. ad  $\zeta$ xij. ex nuchæ. Hyd. Submur. gr. v. h. s. Sulph. Magn. cras mane.

28th.—He considers himself worse after the cupping.

March 30th.—He has not found any improvement in his sight since last report. Mr. Guthrie desired some blood to be taken from the arm, and his system to be put under the influence of mercury.

CASE II.—William Hall, æt. 30, Feb. 6, 1830. A person of tall stature, by trade a cabinet-maker; has suffered from dimness of sight, and slight paralysis of one leg, during the two last years.

He states, that two years since, on raising himself from bed one morning, with the intention of going to his work, he found himself affected with numbness all over the body, was entirely deprived of sensation, but free from pain. In this state he was admitted into the Middlesex Hospital, and in the course of three days he was entirely deprived of motion. Previous to this he was in perfect health, had been living quietly, and his bowels were regular.

He entirely lost sensation for a fortnight, when it returned gradually, from below upwards, with the exception of the face, which remained numb for a considerable time. In the same way he received gradually the use of his limbs, and in the space of six weeks was able to follow his work; but immediately his venery commenced, he says he perceived his right eye to be rather dim, and that he could not distinguish objects in front of him clearly, but was enabled to do so by looking at them sideways. He never experienced any pain in the head or eye, and suffered only from this state of dimness, which was always increased when his bowels were confined. He was in the habit of purging himself with salts; he had a blister or two applied behind his head also, and in the course of months recovered. He had not, however, remained well for two months before the affection returned, and has been gradually increasing ever since. About eight weeks ago his left eye became similarly affected.

He complains of frequent flashes of light before the right eye, more particularly in the morning, producing great confusion of vision. The pupil is contracted, iris fixed, and rough at its anterior surface. Cornea rather convex, and more vascular than natural. The left pupil is more dilated and sight much more distinct, though at times he is obliged to leave off work, from being unable to see. Health unimpaired. He is the first of his family that has been afflicted. Has been a patient since August 1829. He has been purged without benefit, and was cupped to  $\zeta$ xij. a week since. He has also taken the Mist. Terebinthinæ.

Feb. 6th.—Empl. Cantharides temporibus.

7th.—R Strychninæ, gr.  $\frac{1}{4}$ . Cerat. Cetacei, gr. xj. alt. mane appl.

Feb. 15th.—He has had the ointment applied to the blistered surface every other day, chiefly on the right sight. Thinks he can see a little better, as well in front as sideways. Free from pain in the head; bowels rather confined.

Haust. Purgans.

R Strychninæ, gr.  $\frac{1}{4}$  in pulvere, alt. mane applicand.

Feb. 22d.—Can see tolerably well with the left eye, and rather better with the right. He can see the bars of the window and objects better generally than on the last report. He experienced yesterday some twitchings across the face and in the paralytic limb; also complained of intense pain in the vertex of the head, which lasted for an hour.

Rep. Strychninæ.

March 1st.—Says that his sight improves; that he can ascertain objects on the other side of the street. Has had no flashes of light before his eyes. Complained, on the 27th, of much pain across the head, which lasted for several hours.

Rep.

8th.—No change since last Monday. Increase the dose to  $\frac{1}{2}$ .

10th.—This morning he states that his eyesight has considerably improved; that he can distinguish with his right eye any object passing him in the street. He can see the letters over the window of the opposite house, but is unable to make them out. Appetite good; absence of pain in the head; bowels rather confined.

Strychninæ, gr.  $\frac{1}{2}$ , quæque mane.

22d.—Says he is improving.

Gr.  $\frac{3}{4}$ , omne mane.

April 7th.—The eyesight is quite as good as it was on the 22d, but not in the least improved. He fancies that he can see rather farther than he could a fortnight since, but is unable to distinguish objects clearly. The strychnine has been applied every morning to the surface. He has not suffered from any inconvenience arising from the strychnine, except slight twitchings in the left leg, which is the strong one.

He says his sight has been very much improved since he has been under the treatment. He is now able to follow his work every day; can see very well indeed with the left eye, which, in the first instance, was exceedingly dim at times; the right is in almost total darkness, since he was unable to see his hand when held six inches from him. Desired to omit the medicine.

He can now see how many fingers are held up at a distance of two yards from him. Health good.

[To be continued.]

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## LECTURES ON SURGERY,

*Delivered at St. Bartholomew's Hospital,*

By WILLIAM LAWRENCE, F.R.S.

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### LECTURE LVI.

#### *Wounds and Injuries of Joints.—Sprains.—Dislocations.*

ALL injuries, gentlemen, in which the joints are involved, require great attention and care; they are to be considered generally as serious cases: although for the most part they do well under judicious management, yet, under improper treatment, or neglect on the part of the patient of those precautions which are necessary for him to observe, inflammation arises of a serious kind, and leads to changes in the state of the joint which diminish the motion of the part, or ultimately destroy it, or which even leads to such destruction as ends in the loss of life.

Inflammation may be produced by a blow or bruise of the joint, or of the parts in its immediate neighbourhood. Thus inflammation sometimes affects the synovial membrane, and it presents the characters which I shall have occasion to describe to you when I come to speak of that affection. In other instances the inflammatory affection of the joint, produced by a blow, is more general, and causes swelling of the joint, inability to move the part, heat, pain, sometimes external redness. The pain and imperfect motions of the joint are the principal circumstances by which you may judge that inflammation has arisen in a joint which is seated at some depth from the surface, as the hip or the shoulder. Now you must distinguish between cases where the joint swells in consequence of injury that affects merely the external part, that is, the cutis and cellular membrane, and the swelling that arises from inflammation of the joint itself. If the external parts alone are

affected, you will find, that although the motions of the joint may not be quite free, yet that they are tolerably so within certain limits, and that you can move the joint without causing uneasiness. But if the joint itself be affected, it will admit of hardly any motion, and then it will be attended with considerable pain.

The treatment of inflammation of a joint, whether it be from one or other of these affections, consists in placing the limb in an easy position, and in keeping it perfectly at rest—in retaining the joint itself and the limb generally in a state of absolute quietude, and in adopting such treatment as is calculated to diminish or prevent the occurrence of inflammation, that is, in the use of cold applications to the part, in the abstraction of blood locally, either by leeches or cupping. If inflammation should have already arisen in a person of full habit, perhaps even the general abstraction of blood will be advisable.

Wounds of a joint, that is, wounds which reach to the cavity, and which lay it open more or less extensively, are accidents of a more serious kind, because they are attended with a greater risk of the occurrence of inflammation.

The principal object in the treatment of these, whatever their kind may be, consists in adopting those measures which are calculated to prevent inflammation. These have been so well stated by Mr. Hey, in his *Practical Observations on Surgery*, in a chapter which relates to diseases of the joints, that I will just read the part that relates to the subject, and which expresses absolutely all that can be said upon it. "The utmost care should be taken in these cases to prevent inflammation: upon this circumstance chiefly depends a successful termination. I have seen many large wounds of the great joints healed without the supervention of any dangerous symptoms, where due care has been taken to prevent inflammation; whilst injuries, apparently trifling, will often be followed by a train of distressing and dan-

gerous consequences where such care has been neglected. It is generally easier to prevent inflammation in the joints after a wound than to arrest its progress when once begun. I speak now of inflammation affecting the capsular ligament. A slight degree of redness and tenderness in the integuments only is of little consequence, but when the capsular ligament becomes inflamed (what we generally call the synovial membrane), the formation of abscesses, attended with a high degree of fever, and ultimately a stiffness of the joint, are the common consequences, if the life of the patient be preserved." I may observe farther, that in the chapter from which I have read you one of the commencing paragraphs, there is contained a very excellent series of cases illustrating the nature and progress of this affection; and in a chapter upon the same subject, "On the Treatment of Surgical Diseases," by Baron Boyer, there is a similar collection of cases. These two chapters are the best practical illustrations of injuries of the joints, and the mode of treatment, that I am acquainted with.

*Penetrating wounds* of the joints vary considerably according to the size of the wound—according to its nature: whether it be punctured, incised, contused, or lacerated; and according to the concomitant injury of the articular surfaces of the bones that enter into the joint with which the wound of the soft parts may be complicated. We judge that a joint has been penetrated by observing the particular situation, the direction, and the depth of the wound; and there is a particular circumstance which renders the matter pretty nearly incontestible, that is, the escape of the fluid which ordinarily lubricates the articular surfaces of the joint—the escape of synovia. This fluid is transparent, of a light yellow, that is, of a straw or lemon colour, and somewhat viscid in consistence—a little ropy, so that if you touch it with your finger, it forms a string; it has, in fact, something of an oily appearance, and hence the common name given to it of *joint-oil*. If a wound be seated over a joint, which appears, according to your anatomical knowledge, to have penetrated the joint—if, in such a wound, you see the escape of that fluid which I have now mentioned, you can have no hesitation in concluding that the joint has been penetrated. There are, however, in some situations near the joint, tendons inclosed in fibrous sheaths, which are lined with a membrane which secretes a fluid something like synovia; so that you might have an escape of that kind of fluid without the joint being penetrated. You may also have a joint penetrated without seeing the synovia escape. You find, under such circumstances, that if you move the joint slightly, or make slight pressure upon the sides of the

joint, you produce an escape of synovial fluid from the wound. Under circumstances of doubt, I do not see any absolute objection to the very cautious introduction into the wound of the smooth end of a probe, in order simply to ascertain the fact whether the joint be penetrated or not. It is a matter of considerable concern to the patient, and a very important point for the surgeon, to ascertain whether the injury has actually penetrated the joint or not. If it have not, perhaps it is a mere cut through the soft integuments, and of no consequence; while, if it should actually have reached the joint, it is a case of great importance. Recent systematic writers pretty generally prohibit the ascertaining of the extent of such wounds by a probe, and I so far agree with them as to prohibit any attempt which is not made with a small instrument, and in the gentlest way. If the point cannot be ascertained without injury, it is better not to persist in the examination, and in cases of doubt you must adopt such treatment as you would if the joint were really wounded.

*Simple, incised, or punctured wounds* of a joint made with a clean cutting instrument, and unattended with any other kind of injury, are cases that do well if the edges of the wound be carefully approximated, if the joint be kept perfectly at rest, and if the patient be restricted to low diet. The wound which we make in a joint in order to remove a loose cartilage, is an example of this kind of injury; and in the majority of instances, the wound thus made unites by adhesion; no inflammation occurs in the joint, and no unfavourable result is observed to take place; the full power of the joint is recovered. A wound, of a more considerable extent, inflicted in the same way by a clean cutting instrument, and judiciously treated according to the principles that I have just mentioned to you, will get well perfectly, leaving the individual in full possession of the motions of the part. Mr. Hey mentions an instance of a young man who had what is called "a woodman's bill," a kind of sharp instrument for cutting off branches of trees, fall upon the lower part of the thigh. It cut open the knee-joint, just above the patella, making a transverse wound of two inches in length through the integuments and the tendon of the rectus extensor femoris, and exposed the joint so far that Mr. Hey introduced his finger into the articulation from the cavity of the wound. The treatment he adopted in this case was to place the limb in a state of extension, in order to approximate the edges of the wound, which he brought together by means of three sutures, embracing the integuments only. In this instance the wound united readily, and at the end of a month the patient was able to walk about the ward of the hospital with a crutch, and he regained the complete



use of the limb. In this instance Mr. Hey observed that considerable bleeding took place from the wound; the blood ran into the joint, and escaped from it as he introduced his finger; and, in fact, that the bleeding continued as long as the wound was open. He says that some quantity of blood must have passed into the joint and remained there; and the issue of the case proves that such blood in the joint produced no unfavourable effect.

This leads me to observe, that if, in a parallel case, there should be a wounded vessel near the surface of the joint, which you cannot easily take up, the best mode will be to leave the wound open till the bleeding stops of itself. If you judge that the blood has flowed into the articulation, you need not take the trouble to remove it; the attempts made to evacuate it would probably be more injurious than the blood. There is one part of the treatment of the case recorded by Mr. Hey that I might not be inclined to imitate—that is, the approximation of the edges in such a case by sutures. It is true that Mr. Hey is too good and too practical a surgeon to think of including in a suture more than the integuments. He would not have applied a suture to the synovial membrane, nor to the muscle; but probably, under such circumstances, considering the risk of the presence of the foreign body, with which a suture is made, exciting inflammation, I think we should, in wounds of this description, restrict ourselves merely to the employment of adhesive plaisters, and to the due position of the limb.

Baron Boyer mentions an instance of a similar wound in the wrist. It was the case of a young man who had the back of his wrist cut open by a sabre, which divided not only the tendons of the extensor digitorum communis, but completely exposed the joint of the wrist on the dorsal aspect, so that the carpal bones, which are attached to the radius, were completely denuded. In this instance the hand was placed straight; a position by which the edges of the wound were brought together;—they were approximated by adhesive plaisters, and he mentions that in fifteen days the wound was firmly cicatrized, although of course a longer period elapsed before the divided tendons were sufficiently united for the purposes of motion. These cases shew you that even very considerable wounds of the joints, when made by a clean cutting instrument, if judiciously treated, may be recovered from without any injury to the motions of the part.

Under other circumstances these cases do not turn out so favourably. If the wound be injudiciously treated—if it be neglected—if it be left open for a time—if the patient do not keep the part at rest, but continue using it—or if he have not observed those restrictions in point of diet which are

suiited to such accidents—inflammation will occur; and it will arise in consequence of the smallest wounds. Pain and swelling occur about the situation of the wound; inflammation is experienced in the joint generally, and pus begins to be discharged from it. The tumefaction extends to the neighbourhood of the articulation. Very considerable swelling will take place about the joint, and will proceed perhaps to the formation of matter; and a succession of such abscesses will take place. If the inflammation continue, the swelling will not be confined to the joint itself, but occupy the limb generally. In the case of a wound of the knee-joint, for example, the thigh will be swelled and the leg and foot will become œdematous. While this inflammation is proceeding to its full development, serious febrile disturbance of the constitution takes place; the patient's pulse becomes accelerated, full, and strong; his tongue white; he is restless, and perhaps becomes delirious at night; and, in fact, if the inflammation and the fever run very high, the patient loses his life in consequence of these symptoms. Boyer mentions an instance of a wound inflicted on the side of the wrist by a cutting instrument, which laid open the joint laterally. I think he states that the patient was brought to the Hôpital la Charité, and the wound was dressed there, in the first instance, by one of the religious sisters—the nuns, who attend the patients in regular succession. Instead of approximating the edges of the wound, she filled the cavity with lint; and the consequence was, such a violent inflammation of the hand, fore-arm and upper-arm took place, that in the course of a short time mortification came on, and the patient died within a few days. In one case, related by Mr. Hey, of an injury of the knee-joint, in which the accident was not seen by him till some time after it occurred, the joint was cut open above the patella, and the union of the wound had been neglected. When Mr. Hey first saw the wound, he found that a seton had been introduced; and he states that it had communicated with an abscess which had occurred on the opposite side of the limb. It is not a matter of much surprise that, under that course of proceeding, a stiff joint should have been the result; ankylosis occurred, and the patient lost the use of the limb; in fact, he was pretty fortunate in escaping with his life, after such surgery.

In the year 1825 I had a patient under my care in this hospital, who had a penetrating wound of the knee-joint. It had been cut by a knife, which entered just over the external condyle. The accident occurred three weeks before the admission of the patient. He described that the surgeon who first saw him discovered synovia, and that, introducing his probe, it went behind the knee-pan. It seemed that little care had

been taken in the management of the wound, and the patient had not paid much attention to it personally. When this patient was received into the hospital, there was a general swelling of the whole length of the limb—a swelling of the leg and thigh. He had an anxious countenance, his pulse was 120, he had lost his appetite, had a white tongue, and obtained no rest at night. The wound over the external condyle, at the time of his admission, was about the size of a shilling, presenting an appearance which is usually found in such wounds. Union had not occurred, and inflammation took place in the joint, which presented a mass of slightly prominent granulations, something like the granular surface which takes place in an opening over a diseased bone; but they were tolerably healthy granulations, from which fluid was discharged in considerable quantity. He remained in the hospital two months (he was received in August, and remained till October), during which, in consequence of fever and the local symptoms, it was necessary to bleed him three times from the arm, and the blood was strongly buffed and cupped. He had leeches applied to the limb; poultices, fomentations, and other means likely to lessen the local symptoms were employed. At the end of the time that I have mentioned he went out of the hospital, but as he lived in this neighbourhood I had an opportunity of seeing him from time to time. He went out with the limb still swelled from the groin downwards, without any power to move the knee-joint, frequently suffering considerably from pain, fever, and want of rest at night. By January following the external wound had completely cicatrized, and in the subsequent September—that is, about twelve months from the time that the accident originally took place—the swelling of the knee and of the limb had pretty nearly subsided. He remained, however, with a stiff joint—that is, he had no power of moving the knee; but it was not absolutely ankylosed, for, by taking the thigh and leg in my own hands, I could move them to a certain extent, though there was no power of motion by the volition of the patient.

As *contused and lacerated wounds* in the soft parts generally, are usually followed by inflammation and suppuration, you will conclude that wounds of this description, when inflicted on a joint, will be likely to lead to the same kind of inflammation, and which, it is probable, will terminate in stiffness of the joint. This, however, does not appear to be always the case, and you should therefore adopt that course of treatment for these wounds, as well as for others, which is calculated to prevent the occurrence of inflammation.

You should put the limb into those circumstances that are most favourable to the per-

formance of the natural curative processes that take place; and you find frequently, not only that no inflammation comes on, but, in fact, that the motions of the part are pretty completely recovered. Mr. Hey had under his care, at the Leeds Infirmary, a young woman who had her elbow-joint laid open in consequence of the wadding from a pistol which was discharged very near her. It laid open the joint at the side, and cut through the tendon of the triceps extensor cubiti, so as to expose, and indeed make such a free opening in the joint, that Mr. Hey could introduce his finger. He gently approximated the edges of the wound, put the patient's limb in a half-bent position, supported by soft pillows in bed. He had the part covered with a soft bread poultice, keeping the joint and limb at rest, and not allowing it to be moved from the pillow except when it was raised for the purpose of changing the poultice. No material inflammation ensued in this case. The wound was cicatrized in about a month, and the full use of the elbow-joint was recovered in that instance.

There are other cases in which a penetrating wound of the joint is complicated with injury of the bone—in which there may be a fracture extending into the joint, at the same time that the joint itself is laid open externally; or in which the articular end of the bone may be comminuted.

Now I have already had occasion to mention to you some accidents of this kind. I stated the case of a compound fracture of the patella which did well, the joint remaining stiff after the accident. I mentioned a case that was under my care in this hospital during the last summer, in which the inferior end of the tibia was comminuted: the injury of the bone communicated with the external wound, so that the ankle-joint was laid open—where the external malleolus came away with the cartilaginous covering, and where the injury terminated by ankylosis of the joint, no other unfavourable symptoms occurring. Mr. Hey has furnished two or three interesting cases of this description. In one instance, a young man striking himself a severe blow upon the ankle with a hatchet, laid open his ankle joint, cut off a portion of the lower extremity of the tibia, one inch in length, and half an inch in depth, and also cut off a part of the astragalus. In this case, Mr. Hey took out a portion of the broken tibia, but the astragalus was too much connected with the tendons and other soft parts, to be removed. He then approximated the sides of the wound, and followed the treatment that I have mentioned;—now in that case the power of the joint was completely recovered, and in about four weeks the individual was able to walk about the ward.

In two other instances of young subjects very serious contused wounds of the elbow

joints took place, in which the articulations were extensively laid open, and in which there was a fracture of the lower ends of the humerus communicating with the joints. In both these instances, Mr. Hey removed some portions of the fractured bones. In one case, one condyle was broken, which he took out; in the other case, the whole of the lower extremity of the humerus was so comminuted that he removed it entirely. In both cases, the external wounds healed very well, no inflammation ensued, the accidents were completely recovered from, and there was as great a restoration of the powers of the joints as could possibly be expected after such serious injuries.

The general result, therefore, of experience on this subject is, that although these penetrating wounds of a joint are serious cases, and although if improperly managed even the slightest of them may lead to inflammation, which will be followed by a stiff joint, or by a considerably impaired condition of the part as to motion, or in fact even by loss of life; yet, if they be properly managed, accidents of the most serious kind may be recovered from, either with very trivial diminution of the motion of the part, or with the complete restoration of its powers.

I shall merely observe to you further, that wounds of a joint effected by a gun-shot, where the joint is laid open, and at the same time where the bones are shattered, require amputation: it is not a kind of case that we can attempt to save.

#### *Sprains.*

The name of *sprain*, or *strain*, is given to a kind of injury in which the parts composing a joint are moved in some particular direction further than the natural configuration of the bones and the attachments of the ligaments, which are designed to confine them together, naturally admit of. The consequence is, either that the articular surfaces separate, and dislocation ensues, or if the ligaments be too strong, and do not actually give way, they undergo a violent strain, perhaps a partial rupture, without the articular surfaces being actually separated, and it is this latter kind of injury, that is, the violent straining or partial rupture of the ligaments about a joint which constitutes the affection termed, in common language, a "sprain," or "strain."

This is a kind of injury that is not equally incidental to all the joints; it only takes place in the ginglymoid articulations. The orbicular joints, such as those of the shoulder and hip, are so constructed as to give a freedom of motion, in every direction, of the round head of the bone, which constitutes one part of the joint. The main strength of these joints is not derived from the configuration of the bones, nor from the ligament that surrounds them, but from the large mass

of muscles that covers them. When the round head of the bone moves in any direction beyond the point in which it comes in contact with the cavity that corresponds to it, it separates from it, and luxation follows. In the ginglymoid joints, on the contrary, the surfaces of the corresponding bones are more closely fitted to each other, so that they are much more locked in mechanically than the orbicular joints, and are also restrained in respect to their motion by ligaments on each side. They have free motion forwards and backwards, but their motion laterally is limited both by the form of the bone and by the particular situation of the ligaments; when, therefore, these joints are moved, especially in a lateral direction, beyond the point which the circumstances I have now mentioned to you admit of, the injury called a sprain is the consequence.

Sprain takes place most commonly in the ankle and in the wrist. These are the two joints in which, from the important occasions on which they are used, the circumstances that I have mentioned occur most frequently and act with the greatest power; so that these joints are most frequently sprained, and injury takes place to the greatest extent. In the knee and elbow joints, which are also ginglymoid articulations, the causes of sprain are much more rare, and do not act with so much power.

The consequence of this accident is, at the time, pain in the joint, and that often to a considerable degree, and a peculiar sensation, attended sometimes with sickness, accompanies this kind of injury to the ligaments. It is a particular kind of effect produced by injury of that structure, which is not observed in other cases. Subsequently, considerable pain is experienced on any attempt to move the joint; so much so, that the patient is absolutely deprived of the power of using the limb for a time—and perhaps as effectually so, for a certain time, as if the main bone of the limb had been fractured. Soon after the accident, swelling comes on in the soft parts around the joint generally, so that the whole of that part of the limb in which the joint is situated is considerably swollen; and this tumefaction extends much beyond the situation of the joint itself. In cases of severe sprain, with this swelling there is often combined ecchymosis—that is, rupture of some blood-vessels, and escape of their contents into the cellular membrane.

The treatment consists in placing the limb in a situation in which it will be perfectly at rest—in keeping it so, and in adopting the means that are calculated to prevent inflammation. Cold applications to the part in the first instance—cold cloths, saturnine lotion, vinegar and water, are the best. It may be necessary to go farther, and take blood from the part locally, by leeches or cupping. After the employment of these means for some



days, the patient begins to find the cold applications uncomfortable, and it may be advisable to change these for warm fomentations and poultices. Some days after the occurrence of sprain, when these changes occur, the patient often derives considerable benefit from fomenting the part with flannels wrung out of warm vinegar. Some weeks frequently elapse before a person recovers the power of using the joint after a sprain; and this kind of accident often incapacitates a person quite as long as fracture of a bone. If the joint does not continue painful, still it is weak, and if the patient attempt to use it pain is brought on, and the swelling, which in a great measure had subsided, reappears; so that the patient is compelled to keep the joint at rest. If this pain and swelling continue for a considerable time without any heat about the part, or redness, and without any other marks of inflammation, the return of the power of the part may be somewhat accelerated by rubbing the surface with a stimulating liniment, by the application of pressure to the joint and the neighbouring part of the limb—pressure by means of strips of soap plaister or a bandage. It may happen, in consequence of long continued swelling and uneasiness in a joint, that you may find it expedient to employ blisters after an accident of this kind, but in general that treatment is not necessary.

#### *Dislocations.*

The next kind of injury that I have to speak of, and which takes place in joints, is *dislocation or luxation*.

This consists in the separation—the permanent separation—of any two or more bones that are naturally articulated together—an effect which is generally produced by external violence. All the unions of bones admit of being separated, so that we may say, perhaps, that every bone in the body may be dislocated. It is just the question whether you can have external force applied to a bone in such a way as to overcome the strength of union which connects it to its fellow. Although, however, we may say that all the kinds of union which connect together the various bones of the body admit of being separated, yet some of these are so very strong that they do not give way except under the application of excessive force, which produces other effects more important, perhaps, than the separation of the bones, so that this, under these circumstances, is a matter of inferior moment. Hence we find that the various bones that compose the skull hardly admit of being separated by external force except of this very serious kind. The bones of the pelvis are similarly circumstanced. The bones which are connected together by plain surfaces, these being generally what are called *short bones*—bones which are thick, and where the articular sur-

faces are as large as any of the dimensions of the bones themselves, as is the case in the bones of the vertebræ, and the various bones of the carpus and tarsus; these are tied together by very strong ligaments; they are articulated by surfaces which are very large compared to the size of the bones themselves; and although, in point of fact, they can actually be separated by external force, yet the separation takes place very rarely, and it seldom happens that one individual bone is separated from the rest; the separation only takes place in consequence of some excessive force, so as to destroy the general connexion of the parts. The articulations, then, which are principally the subjects of dislocation, and the dislocations of which constitute the greatest number of accidents that we have to treat, occur in the ginglymoid and orbicular joints which are found in the limbs, and the latter are by far the most subject to dislocation. The orbicular joints, such as those of the hip and shoulder, are not so mechanically locked together as to prevent displacement; on the contrary, the general configuration of these articulations is such as to give a free range of motion in every direction, and the ligaments which restrain them are also very loose, so that the strength of the articulation depends principally upon the muscles. The absence, then, of those restraints which the form of the bones, or an accession of strong ligaments would give, renders these joints particularly liable to luxation. The ginglymoid articulations are much less subject to luxation, because the bones are locked together more tightly, and restrained by ligaments, which restrict their motions, so that the luxation of ginglymoid joints requires great force. The luxation of a ginglymoid joint, in that respect, is a more serious accident than of an orbicular joint. The dislocation of the elbow-joint, for example, is attended with greater laceration of the soft parts, with more contusion, and a greater degree of violence than that of the humerus.

Dislocation may be *complete* or *incomplete*—that is, the articular surfaces may be completely separated from each other, or may be only partially separated; practically speaking, however, we know but little of incomplete luxation. Perhaps the orbicular joints, which are the most common subjects of these accidents, hardly admit of incomplete luxation. One has heard of such a thing as the head of the humerus being on the edge of the glenoid cavity of the scapula; but it is difficult to suppose that it would rest there; and, in point of fact, such a case would not differ in treatment from complete luxation. The ginglymoid joints, however, particularly the ankle, do admit of partial luxation. I have seen the tibia luxated forwards upon the astragalus, without having completely quitted the surface of the latter; and the

nature of the ginglymoid articulations is such as to admit of a partial separation, of which the orbicular joints are hardly susceptible. You read of another kind of dislocation in surgical writings, and that is called *spontaneous* or *consecutive* luxation—it is a kind of luxation happening in consequence of disease. When the ligaments that confine the articular ends together are destroyed by disease of the joint, one of the bones may be drawn out of its situation by the muscles, the action of which is then not opposed by the ordinary ligamentous restraints. It is a circumstance not uncommonly seen in the hip-joint—sometimes it is seen in the knee. It therefore is a phenomenon consequent on disease of the joint, and it is not a circumstance to be considered at present, as the object we have now in view is the separation of the articular ends of bones in consequence of external violence.

The *causes* of dislocation are chiefly the application of external force—some considerable force applied to a limb, communicating to it a certain direction, so as to move the bone by which it is articulated to the trunk of the body beyond the limit which the natural motion of the part admits. A person falling down, for example, stretches out his arm to save himself; the arm coming violently on the ground, the humerus is thrown upwards, and the head of the bone is consequently thrown from the glenoid cavity into the axilla. Luxation may occur in consequence of muscular action; but this is a rare circumstance, because there is such an exact adaptation between the configuration of the joints and the movements which any part of the body is capable of executing, and the action of the muscles which are capable of performing these movements, that you do not find dislocation happening in consequence of this circumstance alone. No doubt muscular action frequently concurs with the effect of external force in producing dislocation: thus, if the arm be thrown in a certain direction from the trunk, the action of the latissimus dorsi and the pectoralis major concur in drawing the head down to the trunk, and thus aid in producing dislocation. But it happens that dislocation takes place in consequence of the action of the muscles, as in the case of the lower jaw, where we see dislocation taking place without external violence, probably in consequence of the action of one or more muscles belonging to the part. I remember being called to see a gentleman early in the morning, who was said to have met with a serious accident to the shoulder. When I went to him, I found him in bed, where he had been all night. I asked him if he went to bed well and able to move the shoulder? He replied yes; and in fact he did not know what the accident was that he had met with. The accident occurred a short time before he

sent for me: he rose in bed, in order to take a dose of medicine; he stretched out his arm to take hold of the cup, but did not lift any thing, or bear any particular weight; but simply in consequence of the motion of the arm made under such circumstances the humerus had been dislocated. Although the shoulder came out in this way, it did not return quite so easily—for it took a strong pull before the bone was got back to its place. We may say, therefore, that dislocation may be produced by external violence, by muscular action, or by the concurrence of these together.

As to the *symptoms* of dislocation: in the first place pain is experienced in the joint, and either great difficulty or absolute inability to execute any motion, is experienced. Now these are equivocal circumstances, because they belong also to other kinds of accident. A serious bruise or strain, or a fracture, will be attended with pain, and with difficulty in moving the part; we want, therefore, further signs to convince us that dislocation has taken place, and these are principally to be sought in the changes of appearance which the dislocation produces in the joint, and in the configuration or direction of that part of the limb in which the luxated bone is situated.

In the first place, you of course have an alteration in the figure of the joint, and an alteration in relation to each other of various other points or prominences which are to be felt on the bones that enter into the articulation. The relation of these various bony points may be essentially changed; and in the early state of the dislocation—the condition in which you find it soon after the accident—these alterations are most distinctly recognized. Swelling comes on soon after the accident, and when that takes place, it often obscures the points I have now alluded to; so that you do not get such clear evidence respecting the configuration of the joint, and the alterations that are produced, if some hours have elapsed after the accident, as you do immediately after the circumstance has taken place. Then there is not only this change in the shape of the joint itself, but there is a corresponding change in the condition of the limb: the limb may be shortened, or it may be lengthened, according to the position in which the head of the displaced bone may be carried; or the axis of the limb may be altered in relation to the joint or to the body; and these are changes that generally strike the eye of a person contemplating the limb taken altogether. Then you not only have these alterations in the configuration of a joint, or in the direction of the axis of the limb, but you find that the limb is fixed in its unnatural position, so that the patient cannot move it by his own volition, and that you cannot move it for him except in a very slight degree, and with the

production of very considerable pain: the limb seems mechanically confined to the situation in which it is carried by the displacement of the bone. It is observed, however, that this confinement of the joint in the new situation is less complete immediately after the accident takes place, than when some little time has elapsed; so that when the muscles have contracted and adapted themselves to the new position of the bone, they hold it more firmly in its unnatural position. The degree of immobility of the limb varies in different instances: in dislocation of the hip-joint, the limb is much more motionless than in the case of dislocation of the humerus.

These are the principal symptoms of dislocation, speaking generally: however, as the clock has struck eight, and I cannot conclude this subject, I will postpone its farther consideration till the next lecture.

## HOSPITAL OF MATERNITÉ.

### *Diseases of Puerperal Women.*

THE object we propose to ourselves in this article, is to lay before our readers a clear and concise statement of those facts in relation to the diseases observed in this establishment, and their treatment during the first three months of 1830, which have appeared most worthy of note. The serious nature of these affections, the rapidity of their course, and the epidemic form which they sometimes assume, added to the frightful mortality with which they are often followed, have always led the causes to be sought for most anxiously. Without passing in review all those which have successively been considered the principal, we will merely notice the two causes which have been alternately deemed the most important—the quality of the atmosphere, and the locality. This last, which undoubtedly exercised a very pernicious influence on several of the epidemics which raged at the Hôtel-Dieu, and which have been described in Tenon's "*Rapport sur les Hôpitaux\**," has frequently been brought forward as giving rise to the puerperal diseases which have run through the Maison d'Accouchement at Paris. And under this point of view the solicitude of the *Council of Hospitals* was excited,

in 1828, at which period a commission of physicians was appointed, for the purpose of examining the establishment with the greatest scrutiny, even to the most minute details.

To enable our readers to form, in some degree, their own judgment how far these localities may influence the generation of the diseases which reign in this establishment, we will enter a little in detail respecting the internal arrangements, before we give a history of the diseases; as, besides, so few persons are admitted into the Maison d'Accouchement, it will probably be interesting, as well as useful, to a great number who have not had an opportunity of examining for themselves. We will just notice, *en passant*, the kind of life generally led by the patients previous to their admission, and the precautions and general treatment employed before and after delivery. Each of these particulars may influence, in a manner more or less direct, the development of the affections to which women in child-bed are liable.

The Hospital of *Maternité*, situated at the top of the Faubourg St. Jacques, near the Observatory, is built on one of the most elevated points of Paris, and surrounded by moderate-sized gardens and spacious courts. It is thus raised in the midst of a current of air continually kept up by the winds from the plains of Mont Rouge, which are within a short distance. A dormitory for pregnant women, a ward for those delivered, wards for the accouchement, and an infirmary for the reception of those who have suffered any accident, form the whole of the buildings devoted to this service.

In going through the establishment it is easy to see that it has not been constructed on an appropriate plan for the reception of patients. The distribution of the wards wants that regularity observable in other hospitals; they are for the most part well aired, and the only inconvenience to be complained of is the want of height in the rooms.

The dormitories for the pregnant women are low; on one side they look into the courts, on the other into the gardens; most of them contain about 20 beds each; one, however, is much larger, and contains seventy-five. The whole of this range lodges about one hundred and eighty women; but in the winter this number is considerably in-

\* This is a work which will amply repay any of our readers the trouble they may take to refer to it: full of valuable details on the construction, management, &c. of the French Hospitals.—E. G.



creased, and in the same rooms there are sometimes two hundred and thirty women near their accouchement.

Pregnant women are generally admitted when they are about seven months and a half advanced, or sooner if they meet with any accident. A great number enter only in their last month; and, finally, of the patients who are delivered in Maternité, many do not present themselves until they have already felt the first pains. The life of women who are admitted long before their accouchement, is at once regular and active. There are promenades which they are at liberty to enjoy in summer; those who desire it are occupied in linen work, others assist in the kitchen, and others again employ themselves in the establishments of the different officers, as servants. Each patient thus endeavours to shorten the period of absolute seclusion.

In winter they meet together in a common apartment to work, where they are protected from cold. But this room, though very large, becomes really too small for the number of women that assemble there; the air they respire cannot be otherwise than injurious to health. Hence the members of the Council charged with the examination of this establishment, pointed it out as likely to affect the health of those who were thus crowded the whole day, and probably might possess some influence on the diseases which supervened after the confinements.

With respect to the diet, it differs little from that of other hospitals; and if we consider the kind of life led by the majority of those who claim an asylum here, we shall find it is better than that which they had previously been accustomed to.

As soon as the patients feel the first pains coming on, they are conducted to the ward in which the accouchements take place, and receive all proper attention. This ward, which is of considerable size, is constantly kept at a moderate temperature, and contains a dozen beds, always ready for the patients as they arrive. They are attended by the pupils of the midwives, arranged in divisions of five each, who succeed each other in the service of accouchement. Each series, or division, is superintended by an older pupil, more advanced than the others. As soon as any difficulty arises, the *sage-femme* in

chief is called; and if the case should be very serious, and beyond her power, she has recourse to the surgeon of the establishment. Every arrangement is made to secure a continual supply of warm linen for the patients and their children as soon as they are born. Baths being fixed near, allow the patients the benefit of them during their labour, without being removed from the ward.

The patients, when delivered, are immediately removed by the attendants into the wards destined for the reception of those whose labours are over. These kind of sleeping-rooms are two in number, and have one side fronting the north, the other the south. They are long and narrow, and divided into a great number of compartments by low partitions; each of which is destined to receive a patient immediately after delivery, and her child sleeps separate in a cradle, on a level with the bed and by its side. This arrangement, it was thought, would contribute to the comfort and tranquillity of the patients, by separating and making them in some degree independent of each other; but it has an injurious effect, by preventing a free circulation of air, and, in winter, causes serious inconvenience—the unequal distribution of heat. Hence, notwithstanding the means of heating the apartments are used almost with profusion, these wards are always colder than the others, especially in those parts which are most remote from the stoves. This inconvenience, which of course disappears in summer, when it is no longer necessary to have recourse to artificial means for raising the temperature, has appeared to us to be one of the principal and most common of the causes of peritonitis. The greater number of these women are ignorant and totally uneducated, and for this reason less likely to take proper care of their health. They uncover themselves when hot and perspiring, or get up to satisfy the calls of nature without due precaution, and inevitably take cold. The commission of 1828 had noticed this inconvenience, for they proposed having the upper part of the partitions levelled, in order to establish a free circulation of air. They also had the water-closets altered, in which there were ventilators that established such a current of air as was very likely to prove injurious to the patients. At this period, too, and at the request of the same

commission, carpets were placed before each bed, in order that the patients, when in a weakly state, might not be obliged, in getting out of bed, to stand upon the cold tiles. The manner in which the patients were removed from the wards where they had been delivered, to the dormitories, excited the attention of the commissioners: they were enveloped in a counterpane, and placed on the common litter. It was thought that during the removal they might take cold, and therefore litters were made, covered in by curtains, which completely closed them, and secured the patients within from exposure to the cold air.

The chief midwife visits these dormitories every morning and night. As soon as the slightest accident or disease supervenes, the physician is called, and from hence they are removed to the infirmary, or sick wards, if the symptoms indicate a serious affection.

The sick wards are exposed to the east at one side, and look into the gardens; to the west on the opposite, where they are surrounded by courts. These wards are formed by a suite of rooms, containing each five or six beds; they are rather low, but they receive a good supply of fresh air from large windows on the garden side, and smaller ones from the court. Every thing is so disposed here that a proper temperature may be kept up during the winter, and that the drinks, &c. may always be given hot to the patients. These wards are attended by female pupils in midwifery, and each of them follows the patient she has delivered, giving her every care and attention she may require. It must be said that the attention the patient receives here is both more unremitting and efficient than in the other hospitals. Nothing is confided to the mere nurses

or servants of the establishment, who are always more or less negligent. The application of leeches, the administration of baths—of all the medicines, is made by the female pupil who has the care of the patient, and who receives the directions from the physician himself. As to her services, they are not of a few moments duration, and at long intervals, they are constant. Day and night a pupil is on watch in every ward, ready to supply at each moment the wants of the patients. These pupils fulfil their duties with a degree of zeal and industry that we have never seen equalled elsewhere. The patients are kept in the sick wards as long as their convalescence may require; there are a great number, however, who desire to be discharged before they are completely restored to health.

These are some of the considerations we have thought would add interest to the history of the diseases observed in the January quarter. To discuss each of the points alluded to would not fulfil the object of this article, and make it besides of unnecessary length. The reader will draw his own conclusions as to the degree in which the health of the patients may be influenced by the localities.

The women delivered during the quarter from the 1st of January were seven hundred and fifty in number. Of these, two hundred and seventy-six were attacked by diseases, of a more or less serious nature, after their confinement; and of this number two hundred and twenty-seven were discharged either completely cured or very nearly convalescent. Forty-nine died. The following table will indicate in what proportion the diseases and deaths in the three months bear to each other.

	January.	February.	March.
Accouched .....	275	233	242
Discharged without any disease having supervened ...	165	140	169
Affected with disease .....	110	93	73
Cured .....	94	66	67
Died .....	16	27	6

In examining this table we see, that from the month of January to March, the number of sick diminished sensibly, though the number of women delivered by no means decreased in the same proportion; on the contrary, there were more in March than February.

With respect to the mortality, which

was not very considerable in proportion to the number of patients in January, we see it increased in February on a smaller number. In March, again, it is very much reduced, and not in any proportion to the number of patients.

If we compare these results with the state of the atmosphere we find, that

during the month of January, the cold was severe but constant; in February the temperature was very variable. Finally, in March the weather was both mild and uniform, and the mortality seemed suddenly stopped; and out of a larger number of accouchements than

the preceding month, there are not a fourth of the number of deaths.

Among the two hundred and sixty-six women in whose accouchement disease supervened, the following table will shew the results.

Peritoneal Inflammation of the Uterus.....	137, of which 32 died.
Gangrenous disease of the Uterus .. .. .	5 .....
Inflammation of the Uterus, but not of the Peritoneum...	3 .....
General Peritoneal Inflammation.....	1 .....
Gangrenous Erysipelas.....	1 .....
Apoplexy .. .. .	1 .....
Abscess .. .. .	1 .....
Bronchitis .....	63 all cured.
Pneumonia.....	11, of which 5

This table includes all the interesting or important diseases; the others had only some very slight affection, such as rheumatic pains, temporary diarrhœa, hemorrhoids, or ephemeral fevers, which quickly disappeared.

We will examine, in as many paragraphs, such of these diseases as appear most worthy of notice; but previous to this, it will perhaps be useful to note some of the principal facts observed in one hundred and sixteen post-mortems which have been made. Three only were missed out of the whole number of deaths on account of the severe frost.

The most frequent changes of structure were found in the abdomen, and generally in the peritoneum; in the uterus; its appendages; the lymphatic or venous system; and sometimes in the pelvis, vagina, or bladder.

*Affections of the Peritoneum.*—In some cases the peritoneum was observed very red, especially in the convolutions of the small intestines, and the anterior wall of the abdomen. This affection was rarely simple; it was generally accompanied by a sero-purulent effusion, more or less considerable, and varying very much in character. At one time it was of a greyish white colour, at another of a deep yellow. Often it has been observed of a decidedly red tinge. In general the greyish tints evidently depended on the predominance of pus or serous matter in the effusion.

A layer of pus frequently glued the intestinal convolutions together, covering the liver and spleen, and forming a coat, varying in thickness, over these organs. In several cases very large masses of coagulated pus were found floating free in the abdomen; some of them, indeed, had arrived nearly to the

size of a kidney. In five, in the most severe cases, in the pouch formed by the peritoneum in passing from the anterior to the posterior surface of the uterus, a mass of homogenous pus was observed, well connected, and with all the characters of phlegmonous pus—a true abscess, surrounded by a most active absorbent system.

*Alterations of Structure in the Uterus.*

—These alterations all took place either on its external surface, its proper tissue, or its internal face. The external surface was frequently covered by false membranes, and often it was attached to the epiploon, or the adjoining parts. Several times a great number of small fibrous bodies have been observed beneath the peritoneum, about the size of a cherry-stone, and which were scattered over the external surface of this organ.

With respect to the tissue, its alterations were rare, especially near the centre of the walls: it was scarcely ever observed affected, except as the internal or external surface was approached. It sometimes presented a flaccidity, which seemed to depend on a simple infiltration. A decided redness was observable in some cases, but these were very rare. Several times small cavities were seen near the external surface, which had, as it were, dissected the fibres of the organ. In one case, on the superior wall of the uterus, a fibrous tumour of enormous size was found, nearly equal to the head of a fœtus at the end of its term.

The internal surface of the uterus is that, beyond contradiction, in which we find the greatest alteration of structure. It was almost always covered by a coat varying in thickness, and which is rea-



dily removed by washing. Often it was coated by a layer of concreted pus; at one time it is found uniformly spread; at another, only attached to the point of insertion of the placenta. In some cases, again, it was confined to the neck of the organ.

This surface was the seat of softening, of which some appeared the result of simple inflammation, and others to be of a true gangrenous character. In the former, the texture of the organ was generally preserved; the tissue softened, but still the disposition of the fibres was distinct; in some few cases, however, the most superficial coat had degenerated into a kind of reddish pulp, without any fœtid odour, and analogous to an inflamed muscular tissue, in which suppuration had commenced. This species of softening, in all the cases examined during this period, had taken place towards the superior angles.

In relation to the gangrenous alterations of structure, two kinds were observed. In one it appears in the form of an eschar more or less brown, affecting several lines of tissue, and giving a very distinct gangrenous odour. The tissue is reduced to a dirty white, striated with grey, in which it is impossible to recognize the original structure. This matter, which appears diffuent, rests, nevertheless, adherent to the subjacent tissue, like an eschar produced by caustic, when it is already in part detached by the suppurative process. The other species of gangrenous softening is red; a part, and sometimes the whole of the internal surface, is converted into a gelatinous tissue, of a bright red, in which the original fibres of the organ were no longer distinguished, and which M. Desormeaux, late physician to La Maternité, compared to strawberry jelly. This tissue, which spreads a sickening and characteristic odour, seems at first to be easily removed by water, or the blunt edge of the scalpel: with the exception of the colour, however, it resembles much the tissue already described, and can only be detached by very strong scraping or rubbing. Sometimes this affection extends two or three, and sometimes four lines, into the sides of the organ. It has never been observed extending through the coats, as it has been said to have done in some cases.

*The Appendages of the Uterus.*—The Fallopian tubes, covered with false membranes, were often more or less de-

formed: they were found sometimes bulged out at their extremities, owing to the presence of little cavities of purulent matter in their interior. This alteration was generally accompanied with redness of the mucous membrane which lines the tubes.

The ovaria were often red in the interior, and sometimes shrunk, and reduced to their fibrous membrane; often, on the contrary, they had increased in size, and were infiltrated with serous fluid. In some cases, their volume depended on the pus which they contained; in these cases, they were sometimes found as large as a pigeon's egg; their tissue crisp and crumbly.

The broad ligaments were often injected with serous fluid to a greater or less degree. Often this subperitoneal infiltration extended along the cellular tissue by the sides of the psoas magnus, as far as the kidneys; sometimes, also, spreading in front of the vertebral column, it affected the mesentery.

*Changes in the Vascular System.*—Nothing was more common than to find, in conjunction with the preceding appearances, pus in the vascular system. The lymphatic vessels appeared to be much more frequently than the veins the seat of this affection. Of twenty-five cases in which pus was found in the vessels, in eighteen it was in the lymphatics only; in three instances it was found in both, and in four it was observed in the veins alone.

Pus has been observed in the lymphatics with precisely the same characters as have been lately described by MM. Danyan and Jonnillé. They were seen under the peritoneum, on one or both surfaces of the uterus, in whitish lines, enlarging at various points, sometimes to such an extent as to form cavities capable of holding a small almond each; at one time it was impossible to trace them in the broad ligaments; at another, on the contrary, they ascended in a serpentine direction round the ovarian veins, the blue colour of which prevented the possibility of confounding the two orders of vessels with each other. In many instances the mischief had not stopped here. These vessels were traced to the lumbar ganglions, anastomosing round and penetrating them; these latter were sometimes simply red and enlarged, at others they were gorged with pus, and were easily broken up. As to the ductus thoracicus, it was opened in all the cases

where it was thought probable that purulent matter had been absorbed, but without ever finding any trace.

The pus contained by the veins of the uterus was generally of greater consistence than in the lymphatics. As to their coats, they were commonly found of their natural thickness: in one case only the internal surface was reddened.

In one instance the pus found in the veins was solid, forming a kind of plug in the interior. The more fluid part had been gradually absorbed; the opportunity has since occurred of proving that in this manner nature proceeds for the absorption of pus contained in these vessels: this species of plug adheres to the internal surface of the vessel, and finally, at a more advanced stage, it is incorporated with the coat, and it is impossible to separate them. In this stage, it must be effected by the great absorbing process which brings the uterus back to its original state.

All these changes of structure, which are here separately described, are scarcely ever found in that manner. They generally accompany each other, sometimes two together, at others several. Thus we very rarely find the inflammation of the peritoneum and uterus separate, and thus we have always observed the gangrenous softening accompanied by pus in one or other set of vessels.

With respect to the changes which take place in the basin of the pelvis, purulent infiltrations have been several times observed to a greater or less extent in the cellular tissue. In one case an abscess was found on the lateral parts of the vagina, communicating with this canal; in fine the vagina, in two other instances, was the seat of disease. In the first, an abscess formed on the left side, about two inches above the external orifice, which burst, and was found to communicate with the rectum,—the patient died; and the whole of the surrounding cellular tissue of the rectum and vagina was in a great measure destroyed by a sinus, which extended nearly to the top of the ileum. In the second, the vagina, after death, was found in the following state:—There were several bands crossing from one side to the other, which were easily torn across; the anterior side of the vagina was adherent to the inferior portion of the urethra; both were perforated, thus establishing a common passage; the neck of the uterus seemed almost obliterated,

and intimately connected with the superior part of the vagina.

This is a concise summary of the diseases and their effects which were observed in the first quarter of this year; we may, perhaps, return in another number to the treatment adopted in the most important of these affections by their late physician, M. Desormeaux, who was considered one of the most able of the physician accoucheurs in Paris\*.

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#### OBSERVATIONS

ON

#### MALIGNANT DISEASES OF THE EYE.

BY RICHARD MIDDLEMORE,

Assistant-Surgeon to the Birmingham Eye Infirmary.

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DURING the last month I have examined an eye affected with melanosis, another with fungus hæmatodes; in the former case it was particularly remarked by a gentleman present, that whilst nearly the whole contents of the globe consisted of a black melanoid structure, the lens was but little altered; it was, in fact, only increased in density, shrivelled, and of a pearly colour. In the one afflicted with fungus hæmatodes, the lens was distinctly observed, during the whole progress of the disease, pressed against the neural surface of the cornea, of a natural size, and only slightly opaque, the fungoid growth being imperfectly seen through it. This patient died before ulceration of the cornea took place, and on examining the eye afterwards, the lens was seen to be situated immediately behind the cornea: with the exception of being pushed forward, it had undergone very little alteration, although the fungoid mass was in contact with its surface. It would be foreign to my subject to enter minutely into a description of the condition of the eye generally; but I cannot omit to mention, that in both these cases the crystalline cornea and sclerotica were the only parts not intimately implicated in the particular morbid action, which had so thoroughly disorganized other textures; the sclerotic coat was, however, most changed, the cornea somewhat less affected, and the lens, as I have before remarked, very little altered from its natural state; the extent to which the change had taken place in these various parts bearing an exact proportion to

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\* From the Journal Hebdomadaire.

their powers of vitality—furnishing a satisfactory illustration of several points to which I have particularly adverted in the course of my observations upon the present subject: first, that parts of low vitality do not readily participate in malignant disease; and, secondly, that the lens being feebly organized, possesses on this account a thorough immunity from such affections. It has sometimes happened that fungus hæmatodes has been mistaken for cataract, and operations have been accordingly performed for the removal of the presumed disease: on the escape of the lens, which, to the surprise of the surgeon, has on some occasions been quite transparent, a fungus has protruded, much to the annoyance and dismay of the operator. Mr. Travers would appear to entertain the opinion I have been endeavouring to maintain, although he does not very distinctly point out the nature and degree of change the lens has undergone, in the many cases of malignant disease of the eye-ball he has related: for instance, after having mentioned that a fungus, which occupied the place of the vitreous humour, protruded through the cornea, he observes, that the iris and lens were destroyed, leaving his readers to guess whether the crystalline humour had been absorbed, discharged through the ulcerated opening, or degenerated into the disease, in which neighbouring parts were involved. Mr. Travers here joins together two distinct textures as being destroyed by a disease, one of which he has previously asserted sometimes forms a part of it, whilst the other obtains an invariable exemption from it; and this opinion is given after having observed, that “all the textures of the eye are broken up, but here and there the vestiges of one or more may be traced.”

Mr. Wardrop, in his “Observations on Fungus Hæmatodes,” remarks, that the tumour (fungoid), by its continued growth, occupies the whole of the anterior chamber; and afterwards observes, that the aqueous, crystalline, and vitreous humours, become absorbed in the progress of the disease; but, of course, this absorption of the humours will be mainly influenced by the rapidity with which the disease advances: before absorption takes place to any great extent the attenuated tunics may rupture, from the rapidly-increasing volume of their contents; or, such a disorganiza-

tion may take place within the globe, that its absorbing surfaces may be destroyed, and the lens remain so little altered in size, that as soon as the cornea yields, it may escape, and to a casual observer, may even appear to be not at all changed. Mr. Wardrop's cases unfortunately do not support his opinion: in Case 2, it is remarked, that aqueous, and a fluid resembling vitreous humour, escaped; but no allusion is made to the lens: now if an equally-acting pressure produced absorption, would not the most fluid parts have been first absorbed? and should we not have expected to find the crystalline partially removed, and have been unable to discover either aqueous or vitreous humour? Mr. Wardrop would appear to believe, that the humours of the eye most commonly disappear in consequence of absorption produced by the pressure of the fungoid mass, which, as a general rule, applying to all the humours, cannot be admitted. His statement is to the following effect. As the bulk of the morbid growth increases, the humours disappear. The tumor is formed in the posterior chamber, and extends forwards in such a manner as to displace and promote an absorption of the vitreous, crystalline, and aqueous humours. The tumor, by its continued growth, finally occupies the whole of the anterior chamber prior to the ulceration of the cornea; and when the fungus has protruded through the sclerotic, or cornea, the humours are generally altogether destroyed.

Now this statement, valuable as the general character of Mr. Wardrop's observations upon this subject must be considered, is by no means clear, definite, or satisfactory. That the humours should be both absorbed and destroyed, savours of superfluous annihilation; and I much question the fact of the entire absorption of the lens in the majority of instances. I have seen many cases of fungus hæmatodes of the eye-ball, chiefly through the liberality of my professional friends; and those I have examined would lead me to doubt the accuracy of Mr. Wardrop's statements in many particulars. On referring to the seventeen cases detailed in that gentleman's book, I find that in those marked 1, 3, 4, 5, 6, 7, 13, 14, and 17, no mention whatever is made of the condition of the crystalline humour; and in five of them, no dissec-



tion of the eye-ball is given. In Nos. 3 and 10, the lens was discharged by ulceration of the cornea; in Nos. 11, 12, 15, and 16, it preserved generally its situation and size; in No. 2, the aqueous and vitreous humours were observed, but not the lens; in Case 8, it dropped from its situation at an early period of the disease, into the bottom of the vitreous humour. Where is the evidence of the total absorption of the lens prior to the ulceration of the cornea? Where is the proof that the fungous growth occupies the whole of the anterior chamber previously to its protrusion; or that, when it has burst through the sclerotica and cornea, the lens is destroyed?

From these remarks I would venture to suggest, that occasionally, when this disease proceeds with unusual tardiness, the lens may become absorbed; but generally, owing to the loss of the absorbing surfaces, and the suddenness with which distention takes place, it remains little altered till evacuated; that the lens, not the fungus, occupies the whole of the anterior chamber, and is discharged, not destroyed, by the pressure of the fungus as soon as it protrudes; that the lens may be, and often is partially, but seldom totally absorbed, and that it has never been known to be blended with or affected by malignant disease; and that what has been called destruction of the humours (more particularly of the lens) ought to have been termed absorption, or evacuation by ulceration, or rupture of the tunics confining them.

Birmingham, June 1830.

## IRISH COLLEGE OF SURGEONS.

*To the Editor of the London Medical Gazette.*

London, June 3, 1830.

SIR,

It was with a considerable degree of surprise I read an article in the *Lancet* of last week, commenting (*more solito*) in scurrilous language, on the conduct of Mr. Carmichael, in attempting to break down the monopoly which has so long existed to the profit of the favoured few in the College of Surgeons in Ireland. If there be a

man pre-eminent for amenity of manners, as well as undoubted scientific attainments, amongst the Corporation of Surgeons in Dublin, it is Mr. Carmichael: on beholding the dearth of talent there, the system of grasping fees from apprentices, the political intrigues at the Castle for the appointments of surgeons to hospitals, which exist amongst these "corporators," the eye rests with delight, as on the "oasis of the Desert," upon Mr. Carmichael. But let us come to facts: has the Editor of the *Lancet* ever read the laws and regulations of the College of Surgeons in Ireland? first, it prescribes that a fee of not less than 150 guineas shall be paid by each "extern" apprentice to a member of the *College of Surgeons in Ireland*, and 300 guineas if he be "intern;" 10 or 20 on having his name registered on the books of the College; 30 guineas on his becoming a licentiate. It prescribes a classical examination on his becoming an apprentice, (very useful); but this is very easily got over, not like his examination to become a licentiate, and a competitor for practice,—this is conducted in a far different manner. Now what does the pupil get for all this money? If the master be a surgeon of one of the *recognized* hospitals, well and good, he has to pay for no hospital; if not, he must pay for one. Why not this apprentice fee go to the funds of the hospital which teaches him his profession? After all he has to learn his profession from hospital attendance, lectures, and dissections; the fee to the master then becomes useless unless in compliance with the regulations and laws of the College. Well, he passes a five-years' nominal apprenticeship in "*walking the Hospital*," and "*in going through College*:" these are very characteristic expressions, which, I must say, the Editor of the *Lancet* has ably commented on. During this time he may have occasionally the honour of seeing his master, of shaking him by the hand, or a gracious salute. Well, having "*walked*" his Hospital; attended—I was going to say eat—his terms in College; his degree of A.B. obtained; what becomes of him? he finds himself generally ignorant of either professional or classical knowledge. But it is necessary to "*pass*;" his friends expect some fruits from their outlay of capital. The examination at the College is con-

fessedly difficult,—not like the initiation. “Facile est descensus in Averno,—sed revocare gradum.” He must now go to a “grinder:” this is a man generally without practice, who sets up as a lecturer; is well acquainted with the commonly received opinions of the profession, is probably a member of the Court of Examiners, and well acquainted with the usual routine of the questions; he engages, for a stipulated sum, to prepare the young gentleman to “pass:” this is done by frequent meeting and conversations in the grinder’s study; he is put up to the questions he will be likely to be asked, and what answers he ought to give; he acquires by rote a host of parrot knowledge of the profession, which, if his memory be good, he will retain on the day of his examination. But you will say he may not pass: true, this will depend a good deal on the number they have lately admitted—on the state of the profession—on the loss of fees from rising candidates to public favour, &c. &c.—how far it may be necessary to keep up appearances, and not appear to reject every one. But what becomes of the young man who has gone through all the expenses and passed the prescribed time at his profession, and has been rejected by those very persons who have received his apprentice-fee, money for lectures, dissections, &c. &c.? Sent back by them to his friends, stamped as a blockhead, as a *pis aller*, he will probably present himself to that very Court of Examiners who have lately deemed him unworthy to be a competitor—unworthy to attend the paupers in a county infirmary—unworthy to be met in consultation (although their opinion might be necessary to the safety of a human being); and they will pass him with eclat as an army or navy surgeon, send him (if he be ignorant) where his victims have no choice nor no competitors to choose from, and, although disqualified to cut off the leg of an Irish pauper, they authorize him to mangle that of a Wellington or a Nelson. *De mortuis nil nisi bonum* is an old adage. The memory of the late staff-surgeon, Dease, can be little affected by the rejection of such obscure individuals as the Court of Examiners of the Dublin College of Surgeons; men great in their little circle, but totally unknown in the scientific world, and whose names, but for my criticism, would never perhaps

extend beyond the precincts of their practice. To return: the late staff-surgeon Dease returned to Dublin, where he had been educated, after the battle of Waterloo, where he was so deservedly conspicuous, and then about ten years engaged in his profession. His reputation travelled before him—but no; after a frivolous examination, “their honours,” the Corporation of Dublin Surgeons, sent him back to the army. But this was a trying time; the influx of army and navy surgeons was really alarming; one of them had the impudence to call himself an oculist, and that too in the same city with the renowned discoverer of the “membrana jacobii.” An application was even made to Mr. Peel, to prohibit the intruder from practice, under the authority of an act of the Irish parliament; which Mr. Peel, however, construed in favour of the delinquent. A well-known demonstrator to one of the first anatomists and physiologists of the day, and whose preparations are the chief ornament of the Anatomical Museum of Trinity College, Dublin, presented himself before “their honours;” and on the anatomy of the eye, of which he had then made the most beautiful preparations, was rejected. I suppose he did not know there was such a membrane as the “membrana jacobii;” but this gentleman has risen “major invidia;” he is surgeon to one of the first hospitals in England; his writings will hand his name down to posterity when the memory of his obscure examiners in Dublin will have long mingled with their kindred dust.

There may be some faults in the constitution of the College of Surgeons in London, but it is not to be compared to the paralyzing effect of the monopoly of the College in Dublin. Here, there may be too great a competition, which can only serve to elicit talent and excite genius; there, it is a corporate monopoly, which ever since its institution has confined the practice of the profession to a favoured few, who, without known talents, and from the want of a proper competition, have stepped into a lucrative practice, and a fortune often derived from apprentice fees.

HIBERNUS.

## LUNACY COMMISSION.

*Copy of the Report from the Metropolitan Commissioners in Lunacy, made to the Right Hon. Robert Peel, His Majesty's Principal Secretary of State for the Home Department, dated 1st July, 1829.*

SIR,

THE important nature of the duties which under the provisions of the Act of last Session have been imposed upon us as Commissioners for the Licensing and Inspecting Lunatic Asylums in London and its Vicinity, induces us to report to you the general state of the houses under our inspection, and briefly to communicate an outline of our proceedings.

We cannot indeed but review our labours with some degree of pleasure, when, having completed three regular visitations, and having made several casual visits, we are enabled to state that our inspections have been, with few exceptions, very satisfactory.

The establishments licensed by us have been 38, and the patients who were confined in them, on the 1st of August, 1828, amounted to 2047; and on the 1st of May last, to 2048.

In so large a number of houses it is impossible but that a great difference in their salubrity and in their general convenience, arising from local circumstances as well as from their management, must exist. But we have usually found a most ready attention on the part of the proprietors to such suggestions as we have thought it right to make; and in many instances the improvements which have been effected spontaneously by the proprietors and managers of these asylums, have evinced an anxious desire on their part to place them on a better system, and have justly merited our approbation.

But although the asylums, with regard to the comfort of the patients, are generally as good as we could expect, we regret to say, that in those establishments which are more especially destined for the reception of poor and of parish patients, very little attention is given to any curative process.

The number of patients either cured or materially relieved is so small, compared with the total number of those under confinement, as to strengthen our own observations of the imperfection of the present system, so far as it is connected with restoration to reason of those who may be justly considered capable of recovery. It must not, however, be supposed that the managers are as negligent on this point as the returns would imply; the permanence of the disease may be accounted for by the tardiness of the parishes and of the relations of poor persons in sending them to these establishments, where they can in no way contribute to their own support, and

where they are necessarily maintained at a greater cost than they would be either in a parish workhouse or in their own houses; the malady is thus allowed to become inveterate before it is subjected to regular treatment.

It is also but just to observe, that no inconsiderable number of the patients in these private asylums have been received into them when discharged as incurable from public institutions for the cure of madness.

In establishments for a more wealthy class of patients, their cure is more attended to. The results are, nevertheless, less satisfactory than might be hoped. For, as considerations of economy may be supposed to cause delay in the other class, so in this the indisposition to cast the imputation of insanity on a near relation, and the natural feelings of reluctance at being separated from the objects of their affection, are not unfrequently the cause of recourse to these establishments being deferred until the disease of the unfortunate patient has become so formidable and permanent in its nature as to be with difficulty, if at all, subdued.

The want of occupation for the superior description of patients, and more especially for the male sex, is a defect not very easily remedied; and although the poorer classes are in many instances usefully employed in domestic services, it is not practicable to extend that mode of occupation to any great proportion of the patients, nor indeed is there always a willingness on their part to work. Some of those who are in a state of mind capable of exertion, are represented to us as frequently considering employment a hardship unjustly imposed upon them: coercion for the purpose of effecting this object would, for the most obvious reasons, lead to the greatest abuses: we have not thought it expedient, therefore, to urge it so strongly as we should otherwise have felt inclined to have done, although we have taken every occasion to express our approbation when we have seen the patients employed apparently to their own satisfaction, and with cheerfulness and goodwill. The separation of patients of the same class of life, but labouring under different degrees and descriptions of insanity, has not escaped our attention; great difficulties occur in carrying this into very complete effect. In the large establishments, classification to a certain extent is attended to, but it is not universally conceded by those who have the management of these asylums that the entire separation of the patients who are dejected from those who are excited is beneficial to either class. Classification, however, in our opinion, is an object never to be lost sight of, and more particularly in that rank of life where previous education and habit make the distinction of manners, of appearance, and of conduct, more perceptible to the patients; the strictest attention



should be paid to keep those individuals who, from the peculiar tendency of their malady, are necessarily objects of disgust, apart from those who, labouring under aberration of intellect, are nevertheless fully capable of feeling most sensibly the misery of living with such associates.

In the large establishments, the strictest attention is paid to the entire separation of the two sexes; in some of the smaller, the nature of the premises, and of the building, prevent so complete a distinction of the apartments and of the airing grounds as we could desire; thus leaving to the vigilance of the attendants that which we should much prefer to rest, in addition to their constant attention, on the construction and allotment of the asylum. We are well aware that there are reasons for the union of establishments for male and female patients, but the preponderance of good appears to us so decisively in favour of the separation, that we have taken every opportunity of urging it, and we have received assurances from several of the proprietors, that they would do every thing in their power to effectuate this desirable object. To attempt it precipitately would occasion such serious sacrifices of property, and so much inconvenience, that we have not thought it just to urge an immediate attention to it, more especially as we have not the slightest reason to suspect any abuse under the present system.

From our visitation reports it will appear that we have made the prescribed inquiries respecting the religious consolation afforded to patients. Some attempt is made in most of the establishments to attend to this point. The opinions of its utility to the patients are, nevertheless, various. It is obvious that to a large class of them it cannot be useful, and to those who are insane on religious points it is stated to us to be not unfrequently prejudicial; indeed, we are of opinion that even with regard to those patients who are capable of behaving with decency during the celebration of divine service, very few, if any, derive real benefit from it. We are, nevertheless, most anxious that whenever they can attend with decorum, religious service should be regularly performed; and we feel this the more desirable, as we cannot but contemplate the probability of such a practice being most advantageous in its effects on the keepers, and on other persons concerned in the care of the patients.

We have had occasion to exercise the powers confided to us, of releasing patients whose state of mind appeared to justify our interference, and to have caused, either by our own authority or by communication with the friends of the patients, the release from confinement of nine individuals; of these, unfortunately, it has been necessary to replace three in confinement, but we cannot regret that even in these cases of failure the

experiment was tried. When we caused their release, we were aware of the possibility of the recurrence of their malady, but we felt ourselves called upon, in the discharge of our duty, not to permit persons to continue in confinement whose sanity at that moment we did not doubt, and who were also stated to us to have shown no symptoms of aberration of intellect for a length of time antecedent to their release. This power ought always to be exercised after the greatest consideration, and with due caution; it is one, however, of so much value, as well in preventing the improper confinement of persons, as in remedying the negligence of friends, who, though reluctant to consign their relations to these asylums, are not unfrequently equally reluctant to remove them, that the Commissioners would be violating a most important part of their duty if they hesitated to incur the responsibility arising out of its exercise.

It is right to observe, that in many of the above cases, as well as in others, in which, upon examination, the condition of mind of the individuals did not appear such as to justify our interference, the possible sanity of their patients has been suggested by the proprietors and managers of the asylums; and in no instance have we found any indisposition on their part to state all the circumstances which might enable us to form just conclusions on the soundness of the minds of the persons whose cases were under our consideration. Indeed, with regard to pauper patients, we think much more exertion is required to induce parishes to send their lunatic poor to these asylums, than to prevent their confining them there improperly, or retaining them there beyond the period of their recovery.

This observation, nevertheless, must not be extended to distant parishes, where the expense of removal operates disadvantageously, not merely on account of a reluctance to send the poor to these asylums as soon as desirable, but also by their disinclination to incur additional charges by the removal of the persons whose recovery may not prove permanent.

We have found it necessary to obtain your sanction to the revocation of one license, and the discontinuance of another. In neither of these cases did we proceed to this extremity without giving serious and repeated warnings to the parties interested.

We strongly intimated the necessity of correcting great irregularities in the management, and of improving the accommodation of the patients.

Had our suggestions been attended to, and the improprieties of which we had reason to complain been amended, we should not have called for your sanction to so severe a measure.

The continued perseverance in arrange-

ments which called for our decided reprobation, and a very insufficient attempt at any alteration of the buildings, left us no alternative but to exercise a power which, although affecting severely the property of individuals, is nevertheless indispensable for controlling persons who consider profit their only object in keeping these asylums, and who will not be deterred from negligence or malpractices, unless their pecuniary interests force them to regard the comfort of those unfortunate beings who are confided to their care.

The exercise of this power which is vested in us, under the control of the Secretary of State, appeared to us important, not merely in correcting cases of flagrant abuse, but also in preventing less objectionable irregularities, and in impressing on the minds of proprietors and managers of lunatic asylums, that we were resolved, if more lenient measures and strong admonition did not produce due attention to the care and comfort of their patients, that their power of deriving profit from their negligence or their misconduct should no longer exist. Indeed we have good grounds for believing that these instances of severity have excited sufficient attention to justify our opinion of their importance, in creating in all those connected with or interested in these establishments the greatest desire to conduct them in the best manner, and to follow, as far as they are able, the suggestions which, in the discharge of our duty, we have felt ourselves called upon to make. In saying this, we do not wish to impute to coercion that care and attention which we doubt not, in very many instances, proceed from much better motives. Still, however, where so much depends on the constant and unwearied attention of the superintendents, and so much misery may be inflicted by the casual neglect or habitual inattention to what may be esteemed minor or trivial points of management, every stimulus should be added that inspection, remonstrance, and positive though temperate authority can produce.

In this, the first year of the provisions of the recent statute coming into action, every fair allowance should be made for irregularities and imperfections; and from the general disposition which we have found to make improvements, and to mend those parts of the management to which we have objected, we cannot but hope that few instances will hereafter occur in which it may be necessary to exercise this just severity, although a more rigorous attention to various minute points, and an improvement in the manner of conducting some of the establishments, ought to be most strictly enforced in future.

We cannot conclude our observations without adverting to the practice of placing criminal lunatics in private asylums. At our suggestion you have caused some of them to

be removed to other places of confinement; and in one of these instances we were obliged to call for your interference, by the necessity which existed of using more constant coercion than should ever be generally adopted with respect to patients so slightly affected by aberration of intellect, as was the case with this individual.

We are aware that a certain part of Bethlem is appropriated to the reception of criminal lunatics; but its extent is so inadequate to the confinement of all those who are guilty of serious offences, but who are acquitted on the ground of insanity, that we cannot forbear from remarking how very desirable it is, on every account, that some establishment should be set apart for the confinement of this class of insane persons. It is, indeed, a subject well worthy of serious consideration, whether the moral effect on insane persons, either in or out of confinement, would not be considerable, if those who had committed offences were confined in a prison expressly adapted for their reception. Many are the individuals who, labouring under mental malady, are, nevertheless, fully capable of judging how far their being guilty of crime is likely to conduce to their future discomfort, and of appreciating the difference of an establishment set apart for the confinement of criminal lunatics alone, and of those asylums which receive within their walls those only whose insanity has never led them to acts punishable by the law.

We are aware of the difficulties and expense attending the formation of public establishments of this nature, but we esteem it an object of so much importance as to justify our calling your serious attention to it; nor should we have felt that we discharged our duty to the public, without stating our opinion of the necessity of effecting some alteration in the present system of confining criminal lunatics.

We have thus brought to a close the observations which our limited experience of the establishments placed under our inspection and control have enabled us to suggest.

We trust that the experiment which the legislature is making, by establishing a new system of inspection of lunatic asylums, not merely in the metropolitan district, but throughout England, is likely to be attended with success.

There are few subjects on which legislation is more necessary, and none attended with greater difficulty; so as at once to ensure the comfort of the patients, and not unnecessarily to annoy the feelings of relatives by useless publicity.

Whether the present provisions of the law have held a just medium between these two points is a matter worthy of further and of serious consideration.

We only hope that the exertions which we

have made, and which we shall continue to make so long as we have these duties confided to us, will have the tendency of mitigating the severity of one of the greatest ills to which humanity is subject; and trust that this great object may be obtained without improper interference with family feelings, and without allowing our commiseration of the unhappy objects under our protection unfairly to warp our judgments, or cause us intemperately to disregard any one of the complicated interests which may be affected by our decisions.

(Signed by the twelve Commissioners.)

## LONDON UNIVERSITY.

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*To the Editor of the London Medical Gazette.*

SIR,

I HAVE read Dr. Conolly's answer to your remarks on the "soi-disant" London University, and have been much surprised at the self-gratulatory tone which pervades it. I am one of those, and they are not few in number, who, with you, are of opinion that the Gower-Street establishment, as a school of medicine and surgery, was uncalled for; and that the proposal to confer what, in their grandiloquent style, they term a diploma, savours strongly of quackery, and is unquestionably an encroachment on the province and privileges of the College of Surgeons and Society of Apothecaries. The Doctor appears to me to have failed in his attempt to prove that either his school or its certificate is required by the present state of the profession; and I know not how he could assert that the institution to which he is attached "requires that the student shall have *actually* done more than is required" by the College of Surgeons and Society of Apothecaries, before he can receive its certificate. The manifesto of the Council says, "they have thought proper to require attendance on those classes *only* which are necessary to obtain the diploma of the College of Surgeons and Society of Apothecaries;" and as for the period during which those classes are to be attended, *i. e.* "three academical sessions," of five months each—I very much question if any of those who may present themselves for examination, under the latest regulations published by

those bodies, can finish their studies in a shorter period. It is true the candidate will be required to write "an essay, in the English language, on some professional subject chosen by himself"—"*valet quantum*." Dr. Conolly is not ignorant of "the venal traffic" in medical theses carried on in a certain university from which this part of the plan is doubtless copied, and cannot seriously put this forth as an important distinction between the requisites for the Gower Street certificate and the diploma of the two medical corporations above mentioned.

It may surely be presumed that the examiners at the College of Surgeons and at Apothecaries Hall, are at least as well qualified to conduct efficient examinations as the lecturers of the new school; and unless Dr. Conolly be prepared to assert that they are unfit for, or remiss in the performance of their offices, he must acknowledge that the instituting a new order of medical men, under the imposing title of "masters in medicine and surgery, &c." is a work of supererogation.

In conclusion, I may be allowed to observe that it is more than unworthy of the high pretensions he arrogates to himself and to the school to which he is attached, to turn out of his way, at the present hour, to cast obloquy upon "certain universities of the olden stamp." Whatever may have been their sins, and I am far from denying that they have sinned, they do not deserve the sweeping condemnation which, in the plenitude of self-importance, he denounces. Dr. Conolly well knows that the practice to which he alludes was, in the beginning of the year 1825, effectually reformed; and I take leave to tell him that it consists neither with candour nor good taste to express himself in the terms he does, when he must know that at the present day the universities to which he alludes are no more open to the charge of venality than are those of Edinburgh or Glasgow. I could wish to say more upon this subject, but am unwilling to encroach farther on your valuable columns, and have the honour to be, sir,

Your obedient servant,  
SCOTUS.

May 18th, 1830.



## SYMPATHY BETWEEN THE UTERUS AND SCHNEIDERIAN MEMBRANE.

impregnated uterine and Schneiderian membrane did exist in this case, and to a very considerable extent.

*To the Editor of the London Medical Gazette.*

SIR,

IN your very valuable publication of Saturday, May 22d, I have just read, with considerable interest, a letter by Mr. W. Hott, on hour-glass contraction; after which he mentions a few cases, tending to shew that sympathy does sometimes exist between an irritable state of the impregnated uterus and Schneiderian membrane. The following case, strongly corroborating what is there advanced, lately fell under my care, which, should you think worthy the perusal of your numerous readers, an early insertion in your useful periodical will greatly oblige your correspondent and constant reader,

AN ASSISTANT.

Leeds, June 12th, 1830.

IN the evening of April 6, 1830, I was sent for to attend Mrs. R. who was about four months advanced in pregnancy, and had been seized, about ten or twelve hours previous to my visit, with violent sneezing, itching of the nose, &c. which had continued at intervals during the day, succeeded by slight pains in the lower part of the back, abdomen, &c. and a little sanguinary discharge from the vagina. I gave her thirty drops of tinct. opii, and left her, desiring her to be kept perfectly still and quiet. The following day she was better, but sneezing, as well as slight pains, continued occasionally; another anodyne draught was ordered, which she took at 9 o'clock P.M. About ten I was again sent for, as she had become considerably worse. After remaining about an hour she was delivered of a female fœtus, apparently from four to five months advanced. This was her fourth pregnancy, but had never gone to the full period of utero-gestation; but the singularity of this case is, that sternutation had always been the first symptom which had come on in all her pregnancies, and continued till the uterus had dislodged its contents, but never affected her at any other time. From the above facts, I think no one can deny but that sympathy between the

## ANALYSES &amp; NOTICES OF BOOKS.

“L'Auteur se tue à allonger ce que le lecteur se tue à abrégé.”—D'ALEMBERT.

*On the Diseases and Injuries of Arteries, with the Operations required for their Cure: being the Substance of the Lectures delivered in the Theatre of the Royal College of Surgeons, in the Spring of 1829, by G. J. GUTHRIE, P. M. S.*

THE first part of this work is almost exclusively devoted to Aneurism, and, as Mr. Guthrie informs us, in the preface, is intended “to demonstrate that portion of the pathological collection in the museum of the Royal College of Surgeons which relates to that subject, and to prove that the labours and researches of Mr. Hunter anticipated nearly all the observations which have been made by his contemporaries and successors.”

From the formidable nature of this disease, and the frequency of its occurrence, together with the danger attending the remedial means employed, it has, especially within the last 50 years, been considered of high importance to improve this part of medical science to the greatest possible degree. Before much improvement, however, could be effected, a more accurate and comprehensive knowledge of the formation and character of the disease, and still more of the structure of the parts affected, was required, and to this end John Hunter's unwearied and truly philosophical labours, have contributed, far more than has hitherto been generally appreciated. It is true, every one knows the improvement he introduced in the treatment of aneurism, by the operation which is justly distinguished in this country as “Hunter's operation;” but every one is not aware how indefatigable were his researches on this subject. It was long and close reasoning on the examples as they accumulated under his eye, each step he took being confirmed by actual experiment,

which at last led to the improved operation as the result. Before he arrived at this desired conclusion, he had traced the disease from its earliest to its latest stage, following it in all its various modifications of character: after well ascertaining the structure of the healthy artery, and fixing in his mind, as far as possible, the means by which its vitality was carried on, and the laws that regulated its functions, he watched the slightest variation from the healthy state on to the ruptured and gangrenous aneurism. This is what his Museum shews—a valuable record of the steps he took in this investigation; and it is to this record, perhaps, rather than to the operation, which was the result of conclusions drawn from it, that we are so truly and so deeply indebted to him.

Mr. Guthrie, in undertaking to make this part of Mr. Hunter's labours more generally known and better appreciated, has imposed upon himself a grateful task, but nevertheless an arduous and difficult one. The subject of aneurism has been the object of research for the last fifty years, to many of those who have held the highest rank in professional opinion: it is on that account attended with greater difficulties, by the comparison that must necessarily be instituted, with Haller, Hunter, and others, scarcely less distinguished. The satisfaction accruing from it must, however, be great in proportion, if it bear the trial well.

The object proposed by the author necessarily gives occasion to review the whole subject, and weigh the opinions of all the distinguished authors who have written on aneurism, both in Hunter's time and since, marking how far their conclusions have been borne out by the cases on record, and more especially by the invaluable collection left by Mr. Hunter. The subject is one of sufficient importance to warrant considerable interest; we shall, therefore, follow the writer at once into the details, and examine how far he has succeeded in what must be confessed is neither a slight nor unimportant labour.

The first is a preliminary chapter on the structure of arteries, alluding to Hunter's experiments on their elasticity and contractile power, and the alterations of structure in the various stages of inflammation; all the processes of which they undergo, though not prone to it spontaneously,—rarely in the acute form, and then only from injury, or ex-

tension of disease from continuity of parts. He divides this inflammation into two kinds.

“The acute attacks of inflammation which affect arteries, are of two kinds—phlegmonous and erysipelatous, a distinction I first made in regard to veins, and which is of the greatest importance as a pathological fact, death being the invariable attendant on the erysipelatous inflammation, whether it takes place in arteries or veins.”

With respect to the erysipelas, the following remarks are interesting:—

“The erysipelatous inflammation of arteries has not been described as an idiopathic disease, and I have never seen it as such; but I believe the inflammation which succeeds to an injury, and spreads along the internal coat of an artery until it reaches the heart, to be of that nature, and a most fatal disease. I have only verified its existence, by dissection, in three instances, and in all, the patients died very quickly after the accession of the symptoms; but others have noticed in their post-mortem examinations, inflammation extending from the spot where a ligature has been applied up to the heart, and in these cases death was preceded by symptoms of low and irritable fever.

“The symptoms which mark this state of disease, when distinguishable, and several cases are recorded where the appearances described have been noted, are, a very quick pulse, a rapid deterioration of the state of the patient, and degeneration into irritative fever, with low delirium, followed by death.

“In the three instances which I have mentioned, the erysipelatous inflammation of the arteries was evidently caused by continuity of parts with those already inflamed; and in all of them the inflammation was a deep-seated disease situated in the muscles and internal structure of the thigh, the skin being apparently unaffected.

“Chronic irritation or inflammation, by which a slow change in the structure of the part is usually accomplished, appears to be the cause of the various alterations which are found in arteries. The first and simple change is a loss of the elasticity natural to them, which may lead to a state of dilatation, without abrasion or rupture of any of the component parts, although sometimes accompanied by a general diminution of substance, and particularly of the mid-

dle coat. The cause which gives rise to the loss of elasticity seems, however, also capable of exciting in the artery a sort of preservative action, by which it may be strengthened. The loss of elasticity is, therefore, more usually accompanied by changes which are very obvious; such as softening of the inner membranes, partial or general; irregular thickenings; or depositions of cartilaginous, calcareous, or other matters, between the coats of the vessel. It is well known that irritation may give rise to alterations of structure of very different kinds; to the thickening of a part; to its partial removal by progressive absorption or thinning; and to its total removal by ulceration.

"A whitish or yellowish exudation is usually the first observable change, which afterwards becomes a patch projecting internally: as it increases in size and thickness, it assumes something of the appearance of cartilage, but is softer in consistence, and only bears to it a general resemblance in structure. It is the nidus in which calcareous matter is subsequently deposited in numerous small spots, which increasing more or less slowly, at last form incrustations of various sizes, sometimes in small spots, sometimes in patches. These prevail in the aorta, but in the smaller arteries the calcareous matter sometimes forms complete rings or circles, proceeding even so far to render the vessel a perfectly incontractile tube. The cartilaginous deposit is sometimes only covered by the calcareous incrustation, and never assumes the perfect character of cartilage in becoming bone, as in other parts of the body. The calcareous matter is often deposited in spots, in which no sign of cartilaginous matter can be perceived. The exudation of a whitish matter, which subsequently becomes cartilaginous, is always found on the internal coat of the artery, and has been said to be deposited on the external surface of it alone, but never on its inner surface. A close investigation of this disease leads me, however, to the belief, that there is some inaccuracy in this statement, and that the new matter is deposited in the substance of this thin membrane or coat, which seems more particularly affected by it. The preparations in the Hunterian collection, from No. 333 to 345, were made by Mr. Hunter, for the purpose of showing the process," &c.

After thus accurately describing these changes — the general precursors of greater disease, each point is compared with such preparations as bear upon or illustrate it, describing the preparation, and referring to it by number: every stage is thus considered, and further elucidated by remarks, the result of the author's own experience, up to the preternatural dilatation, where he then enters more immediately upon the subject of aneurism.

In relation to Scarpa's doctrine, that the rupture of the internal coats always takes place in aneurism, it is stated—"Contemporaneous and later observations have proved from dissection, that neither this nor any of the exclusive theories of the formation of aneurism are correct, there being several ways in which it may occur:—a conclusion which surgeons in England might have arrived at thirty years ago, if they had taken the trouble to examine the specimens of aneurism in the Hunterian collection."

There can be but little doubt that Scarpa's opinion is incorrect; but the reproach Mr. Guthrie seems to express, we believe, is by no means merited; for the conclusion he alludes to is what the majority of modern surgeons, more particularly *English* surgeons, have expressed, if not for thirty, at least for a great number of years, and even Scarpa himself, of late years, has so far modified his theory, as to say, that an aneurismal sac, or at least a dilatation of the artery, may project from one side, forming, in fact, a true aneurismal cavity; only he maintains, that lamellated fibrin is never deposited before the destruction of the inner coats.

We then come to the following description of a true aneurism, which we think well worth laying before our readers:—

"When the walls of an artery yield by dilatation in any spot, not including the circumference, but, as is usually the case, on one side of the vessel only, and frequently in a small space, it is called a *true aneurism*; the internal and middle coats being found perfect on examination, even by maceration. This state of disease is, for the most part, only seen distinctly in small aneurisms; for as they increase in size, the inner and middle coats appear to be removed by absorption: they may, perhaps, in some cases be ruptured. The



first step in the formation of an aneurism in a part of the aorta which is even preternaturally dilated, is the deprivation of a greater portion, if not the whole, of the remaining elasticity which the part possessed. This is followed, if not accompanied, in general, by the deposition of a curdy yellowish matter at the spot, which now becomes dilated to the whole extent of the deposit, and this probably regulates the size of the opening between the aneurismal sac and the artery generally. The dilatation is usually, at first, more or less circular or oval, from the size of a large pin's head upwards, to any extent the artery will admit of. In some instances it seems to form a sort of split or fissure, rather than an oval opening. If an aneurism of the size of a pea, or of the end of the finger, be examined, by making pressure round it, a small quantity of the yellowish curdy matter may frequently be pressed out from under the inner coat, which yields, to allow it a passage. If a careful dissection be made from without inwards, the three coats may always be distinctly shewn, and this same yellowish matter demonstrated as dependent on the middle coat. From the first moment that the aneurismal dilatation takes place, and before it is large enough to admit the end of the little finger, it becomes filled with a soft coagulum, forming a striking difference when compared with the enlarged, but empty preternaturally dilated aorta, in which this little aneurism is situated. From the moment the spot yields, so as to form the commencement of an aneurismal sac, the edge of the artery surrounding or enclosing this sac, becomes thicker and firmer, so as to form a distinct, thickened, yet well-defined, although rounded edge. This edge seems to be the product of a healthier inflammation than that which has given rise to the deposit of the atheromatous or yellowish curdy matter alluded to. It is set up by nature to form a boundary to the mischief, as healthy inflammation is established in other parts of the body, previously to the formation of a line of separation between those which are mortified and those which are sound. Over this edge the inner and middle coats of the artery can always be traced; and even throughout when the sac is small, and for some distance beyond the edge, when it is large. In this last case

they soon become confused, and are often so blended together as not to be traced; although at others the termination of the inner coat may be seen, as if it had been irregularly removed or torn. It is only then in small aneurisms that the structure of the sac can be fairly traced; for when they have attained a large size, the aggregation of matters external to them, and the slow but continued action which is going on, render a distinct separation of the component parts of the sac impossible."

As a general rule, we agree with the author in the concluding sentence, but not without exceptions, which are of some importance in the history of aneurism, since the possibility of a distinct separation of parts has been proved by authority it is difficult to discredit: we allude more particularly to Professor Nægell's case of Heidelberg; but Janin has related three unequivocal instances, proving that there are two kinds of cases—one consisting of an equal dilatation of the arterial coats, and the other attended with rupture of one or more. In the case related by Professor Nægell, it was an aneurism of the aorta, beginning where it passes through the crura of the diaphragm: it was nearly as large as a child's head, extending to the bifurcation of the iliaes. Professors Nægell and Ackerman found, on dissection, the three coats of the aorta, the internal, muscular, and external, all equally dilated; the outer coat was traced from the top to the bottom, and neither of these gentlemen entertained the slightest doubt of its being true aneurism. And, if possible, a still more unequivocal case is given by Laennec, an aneurism of the aorta, nearly the size of a young child's head, in which the coats were not only perfect, but the sac was filled with concentric layers of fibrin.

With this exception, we think it as clear and accurate a description of disease as any we have met with. It is continued through all the more advanced states, and several cases detailed, descriptive of the different stages, which had fallen under Mr. Guthrie's observation, with constant reference to the Hunterian preparations. We cannot, however, follow him: we pass on, therefore, until we come to the still disputed points, principally between the Italian and the English surgeons; where we

think some of the doctrines of Scarpa and his followers are very satisfactorily refuted.

"Scarpa has insisted that an aneurism is always formed in consequence of a rupture of the inner and middle coats of the vessel, and of the distention of the cellular sheath which surrounds the artery, and not by dilatation in the manner I have described."

After farther detailing Scarpa's doctrines, he quotes him where he thus sums up:—

"1st. That this disease is invariably formed by the rupture of the proper coats of the artery. 2. That the aneurismal sac is never formed by dilatation of the proper coats of the artery, but undoubtedly by the cellular sheath which the artery receives in common with the parts contiguous to it; over which cellular sheath the pleura is placed in the thorax, and the peritoneum in the abdomen.

"Later pathologists, adopting a different language in regard to the structure of arteries, have given a modified description of Scarpa's process.

"It is distinctly stated by Scarpa, by Bertin and Boulland, and they have been followed by all contemporary authors, that an aneurism cannot form at the root, or in any part of the ascending aorta, in consequence of the want of cellular structure which does not there exist. This, which seems to be an important part of the theory, is at once overturned by No. 367 of Mr. Hunter's collection, which is, perhaps, the finest preparation of the kind in existence.

"It shews an aneurism, at the very commencement of the aorta, cut open. The semi-lunar valves, bounding the edges of the opening for the admission of blood from the heart, are distinctly seen forming a part of the wall of the sac, with the orifice of one coronary artery, which is situated in the only part of the aorta that is not dilated, being a part of about half an inch in width and one inch in length, extending upwards, when the vessel assumes its natural appearance of ascending aorta. The aneurismal sac arising from this small portion of the artery is dilated downwards for five inches in length, and at least four in its different transverse diameters, forming a cavity when distended twice as large as a common sized fist. It adheres firmly to the side and posterior part of the right ventricle, and ex-

tends even to the diaphragm, to which it adheres by a broad attachment. The internal surface of the sac around the valves, and on the opposite side, has evidently suffered from that disease which gives rise to atheromatous patches; and the inner membrane can be seen distinctly passing over them, leaving no doubt of the tumor being a dilatation of the coats of nearly the whole circumference of the artery. At the bottom part of this sac, near the diaphragm, there are some remains of concentric layers of coagulum, and the inner coat seems wanting. There is no history belonging to this unique preparation. It combines nearly all the characters of a preternatural dilatation, a very small portion of the circle of the artery not being dilated. The commencement of the sac, and for at least two inches or more, is decidedly formed of all the coats of the vessel, constituting what is called a true aneurism; and I believe that the disease of the inner coat, or its removal, led to the formation of layers of coagulum below, constituting that part a false aneurism.

"This preparation proves the fallacy of the preceding observations, which have been hitherto received upon opinion rather than on proof. It has been supposed by all authors who have written on aneurism that it never took place immediately above the sigmoid valves, because there was no cellular structure at that part which might form a sac; and the artery being covered only by the reflected inner and serous membrane of the pericardium, must always rupture and not dilate. It has also proved that an aneurismal sac is formed by a new growth of the proper external coat of the artery, and that it owes little or nothing to cellular structure where little or none is supposed to exist. Taken in conjunction with 368, page 32, shewing a rupture of a neighbouring part of the ascending aorta, and 396, shewing an aneurism in the same situation, it proves that the cause which decides whether the artery shall be ruptured or become aneurismal, has nothing to do, as has hitherto been supposed, with its cellular covering, or whether it has one or not, but on the nature of the disease which has taken place in the artery."

In regard to the other two axioms of Scarpa—but we have already far exceeded our usual limits; we must, therefore, finish with one extract more, shewing the conclusions Mr. Guthrie

has drawn; which will give our readers a very fair idea of the opinions which are advocated throughout the work.

"1st. That a *preternatural enlargement* may exist with a natural appearance of the coats of the artery, subject, in all probability, to the loss of a part of their elasticity. In some instances the coats of the artery are thinner than usual, principally at the expense of the middle coat; but in the generality of cases, the middle and external coats of the artery are thicker, and the coat softer and more easily detached than is usual from the middle coat. When appearances of more positive disease shew themselves, which is not always the case, they are the atheromatous, or the whitish or cartilaginous patch, attended by calcareous deposits in spots and scales, which latter more frequently lead, as the disease advances, to the honeycombed appearance of the inner membrane from ulceration, as in 367 A, page 78.

"2. *True aneurism* is more generally the consequence of the atheromatous or steatomatous disease affecting the middle coat. It may be combined with a cartilaginous state of the artery, and is not free from calcareous deposit; but the two latter appearances are not sufficiently marked to give the same character to the disease as in the *preternatural dilatation*.

"3. It is difficult to explain in what the difference consists which exists between the state of the internal coat in *preternatural dilatation* and in *true aneurism*; so that the blood does not coagulate in the former, whilst it is deposited in concentric layers in the latter.

"It is possible that it arises from an excess of refinement in the distinction between the two diseases, and that there ought not to be, and perhaps there is not, at a late period, any difference between a *preternatural dilatation*, bulging to one side of the artery, and a *true aneurism*, a state which is remarkably well shewn in No. 411 H, page 62. At all events, *preternatural dilatations*, of a large size, and departing from the course of the vessel from which they arise, do generally lose their distinguishing character of freedom from concentric layers of coagula; so that the distinction between them, under these circumstances, is lost.

"4. A *false aneurism* is formed

through the rupture of the internal and middle coats of an artery, followed by the dilatation of the outer one; or may be merely an advanced stage of a *true aneurism*, in which the inner and middle coats have been distended or affected at one part, so as to have been removed. This may also take place with the outer coat, in which case the cellular sheath forms the aneurismal sac. In the same manner this may afterwards be removed when it comes in contact with bone. Subsequently the bone itself is absorbed, leaving only the superficial fascia; and, ultimately, the skin, as its external boundary; the removal of which gives rise to death by hæmorrhage. This kind of aneurism has also been called *consecutive* or *external mixed aneurism*.

"5. A *rupture* of the whole coats of an artery does not depend on the absence of a cellular sheath, or the non-interposition of a sufficient quantity of cellular tissue between the external elastic coat of the artery, and any superficial covering which it may receive from the inner serous membrane of the pericardium, the pleura, or peritoneum, but on a particular disease of the artery, commencing with the middle and inner coats, which leads to ulceration and rupture, and not to distention. The opening may be either a rent or a hole, of various dimensions. In parts where there is a quantity of cellular tissue it may yet form a *spurious aneurism*. In other parts it gives rise to death by hæmorrhage.

"6. An *aneurism* in young persons is generally the consequence of some accidental injury or disease of the part in which it is situated, and of which the rest of the arterial system does not partake. A *preternatural enlargement* is more common to elderly persons, and is usually accompanied by a general derangement of the arterial system, and frequently by aneurism."

After having fixed these data, the author describes the causes of the various kinds of aneurism, the termination, symptoms, and diagnosis of internal aneurisms, their medical and surgical treatment, including the various operations. The collateral circulation, as influencing them, is also fully considered: it must be evident that each of these would form interesting subjects for discussion, but the great length of this article precludes our entering further into their consideration. Where so many



different points of importance are treated at once, it is impossible for a review to do full justice to all. We have been able to give little more than the heads—an outline of a work which is rich in detail. We do not fully agree with the author in some of his opinions, but the book itself will doubtless be very generally consulted by our readers. As an elaborate illustration of the labours of John Hunter—thus bringing within the scope of all what was before confined to a few—it has a great and undisputed merit; and as a work of surgical science we are mistaken if it will not rank high.

The Second Part, which treats of the Injuries of Arteries; their Treatment, and the various modes of taking them up, we will consider in another number.

#### COLLEGE OF PHYSICIANS.

Monday, June 14, 1830.

DR. ROBERTS IN THE CHAIR.

#### *Hydrophobia.*

DR. HAWKINS read a paper containing “an account of some experiments relative to the prevention or cure of hydrophobia, and the bites of serpents, by Cæsar Hawkins, Surgeon to St. George’s Hospital.”

Dogs are affected with two kinds of rabies, in one of which they are extremely furious, while in the other they manifest no disposition to injure those around them unless they be disturbed, when they are apt to snap. Mr. Hawkins is inclined to think that there is a similar difference in man also, and that in both instances it arises from the temper and previous habits of the individual. Thus, in a boy of docile and amiable disposition, the symptoms were comparatively mild, and the last stage passed in apparent tranquillity; while in another, whose habits were known to be depraved, the disease displayed itself with dreadful intensity. Mr. Hawkins recommends, that for experiments upon dogs, those should be selected which are affected with the dumb madness, as the identity of this with the more violent hydrophobia is distinctly made out, and the danger to the experimenter is less.

A spaniel, which had been bitten three weeks previously, had begun to shew symptoms of illness during three days, when recourse was had to the guaco. One table-spoonful of the juice was administered three times on that day, and four times on the day following. The effects were of a decided character; the bark peculiar to rabid dogs was not heard after the first dose; the irritability and restlessness were subdued; the animal seemed lively, and its movements natural; the jaw, which had hung down, was closed, and the animal able to drink. For though the dog, when labouring under hydrophobia, does not dread water, yet he is unable to swallow, owing to a paralytic affection about the muscles of the throat. Next day, however, notwithstanding this improvement, the symptoms were found to have increased, and he died in two days, it being deemed inexpedient to waste the small quantity of the remedy which the author possessed in any further attempt to save him.

Soon after this experiment, a boy was admitted at St. Thomas’s Hospital labouring under hydrophobia, on whom the guaco was tried; but the relief is stated by Mr. Hawkins to have been much less than he had previously seen from full doses of Prussic acid. It thus appears that the guaco failed in both these cases as a cure, though in the former especially it manifested decided power as a palliative. The action of the remedy seems to be that of a sedative, small animals, such as young rabbits, dying under its administration much in the same way as from Prussic acid.

Mr. Hawkins suggests the propriety of directing more attention than has hitherto been given to the first symptoms of the disease; for while the phenomena attending the last thirty or forty hours of the patient’s existence have been minutely described, little is known of the premonitory symptoms, during which alone there seems to be any hope of remedies proving efficient.

On the second proposed subject of investigation, namely, the effect of the guaco on animals bitten by poisonous serpents, the experiments which Mr. Hawkins has had an opportunity of making, have not led to any satisfactory result; so far as they go, they do not tend to increase the reputation of the remedy.

# MEDICAL GAZETTE.

Saturday, June 26, 1830.

“*Illet omnibus, illet etiam mihi, dignitatem Artis Medicæ tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso.*”—CICERO.

## IRISH COLLEGE OF PHYSICIANS.

It has long been held by some a most devoutly-to-be-wished-for consummation, to unite in an indissoluble bond of union the two professions of Medicine and Surgery—to make one profession of both; and the College of Physicians in Ireland seem to be disposed to adopt a measure calculated to promote that object.

But before we mention particulars, we cannot help expressing our conviction—that the perfect accomplishment of such a scheme is beyond the powers of ordinary humanity. In the early ages of the world Medicine and Surgery were one profession; the same individual practised both; he was little burthened with principles—the operations and varieties of treatment which he employed were simple and few. Time rolled on, and with it knowledge of every sort necessarily increased. The division of labour—if ever admissible in any profession, most justifiable and proper in ours—was had recourse to. Individuals indeed might still be found eager, from notions of self-sufficiency and motives more sordid, to engross and monopolize every branch to themselves; but the public voice was against them. People began to see that the man who would pretend to undertake the management of the whole human frame, must be a quack—that it was impossible

“That one small head should carry all he knew,” or pretended to know. The faculty generally took the hint; and perhaps, in their over zeal to gratify their patrons, overdid the thing. The

“labour” was now divided with a vengeance. The human body was not only distributed with reference to its inside and its out, but was portioned and parcelled into as many fields of operation as there were organs or parts to be distinctly enumerated. Hence we meet with so many strange denominations of practitioners among the ancients. What should we think of a Phoniscus or a Vociferarius—a medical man looking for business, and professing to treat the human throat and organs of voice alone? Yet such persons did live in former days by their profession, and perhaps quite as well as the swarm of dentists, oculists, aurists, &c. who at the present day devote their attention exclusively to the minor operations of surgery, and derive a livelihood from their success. Now without approving of all that minute division and subdivision which was so pleasing to the ancients, our cotemporaries deem it not inexpedient to subdivide to a certain extent. In the surgical profession we find countenanced, and we think very properly, the branches just now alluded to. No surgeon who aims at maintaining a high character in his practice will profess to be at once an expert oculist, a dentist, an aurist, and at the same time a good practitioner in ordinary. This seems to be generally admitted. Yet of late, with something very like inconsistency, a cry has been raised that medicine should be added to the various other acquirements of the surgeon. Why, so indeed it should—as an acquirement—surgery being very incomplete without it; but if it be meant that the surgeon should undertake the treatment of every medical case that may fall in his way, just as he would one purely surgical, then here we would join issue, and return to our original position—we doubt much the possibility of the two professions ever becoming one.

We see no objection, however, to the

surgeon's becoming amply qualified for the practice of medicine. We hold that his education cannot be too extensive. Nay, we see not why every obstacle to his advancement should not be removed. He should be permitted every facility in the way of degrees, diplomas, and licenses. His being a member of one profession should not prevent him, if such be his pleasure, from belonging to another, and another. The very qualifying of himself for these, will render him the better prepared for settling eventually in that one which sooner or later must be adopted as his abiding place: for, as it appears to us, the thing will correct itself; the man, however learned, however accomplished, however thickly bespread with honours and immunities, will see his best interest centred in the confining himself at last to a single branch of the healing art.

In Dublin—for it is with Ireland more particularly that we have to do in the present paper—nothing exists to prevent a man from being qualified in every branch of medicine and surgery. But when he comes to practise he *must*—if he mean to proceed respectably—choose to which profession he shall belong. If he be a member or licentiate of the College of Surgeons, he is excluded from the list of Fellows and Licentiates of the College of Physicians; and if he belong to the latter he cannot be enrolled among the former without relinquishing his former grade, the exclusive spirit which distinguishes one body being quite sufficient to operate to the disunion of both. The natural consequence of this is, that the surgical part of the profession in Dublin, like some of their brethren elsewhere, take every thing that comes in their way—medical cases as well as purely surgical; perhaps, too, the reaction which their exclusion from the other college creates, prompts them unhesitatingly to manifest their independence.

At the same time it is a remarkable fact that there are more medical graduates—graduates of the University of Dublin and Edinburgh—connected with the College of Surgeons in Ireland, than would outnumber by far the whole College of Physicians in the same island—Fellows, Hon. Fellows, Licentiates, and all. They know this—they know their strength—and with a consciousness of independence perfectly warranted by their numbers and their respectability, they trouble themselves but little about the exclusive regulations of the King and Queen's College in Ireland.

But there is a rumour afloat that a change is in contemplation. The College of Physicians, we understand, are not unwilling to compromise a little, and to come forward with terms of alliance and concord. They are half ashamed of the system of exclusion which their by-laws enjoin—and they are sensible how injurious to their real interests is the large fee which is demanded for admission to their Hall.

Something has already been done to remedy the first defect. We have heard of a recent instance in which the College of Physicians granted examination and license to a professed member of the other college—nay, a professor of that establishment; and we are not sure but that other instances may more recently have occurred. But the fee is the grand obstacle. What surgeon—or how few of the surgical profession, would pay a fee of upwards of fifty pounds, besides submitting himself to a two days' scrutiny, in order to have the nominal privilege of meeting a member of the College of Physicians in consultation on an ordinary medical case? How to obviate this objection is a problem which has occupied the minds of many eminent members of the medical profession in Ireland; and the plan, an outline of which we subjoin, is said to have originated with an Honorary Fel-



low of the King and Queen's College. This gentleman, in his ingenious calculations, takes into account the number of medical graduates practising as physicians in Dublin without being connected with the College; these are, and feel themselves, somewhat the worse for their want of caste, and would gladly, no doubt, embrace an arrangement, or accommodation, that would set them on an even footing with their more prosperous brethren. It must not be concealed that the reluctance or the inability to expend 50*l.* on a speculation of doubtful advantage, prevents many medical practitioners in Dublin, regular graduates of the Irish or Scotch Universities, from joining the College; the examination is *not* the bar, however it may be assigned as the ostensible reason. Mitigate and modify the conditions of connexion, and we promise a speedy, a full, and a brilliant accession of eminent names to the College roll. Suppose that instead of being obliged to pay at once the large fee which we have already mentioned, the candidate were to enter into an engagement to pay yearly a sum of from five to ten pounds, just as is done by the members of many other learned societies throughout the kingdom—the previous strict examination and other preliminaries remaining *in statu quo*; why, we shall venture to assert that there is not a regularly-educated medical graduate in Ireland who will not embrace the terms, and become forthwith a licentiate of the Irish College.

We shall return to this subject at an early opportunity; we merely add that the plan appears to be eminently deserving of the attention of our much-respected friends in the sister country. The consideration of the vast increment which it would infallibly afford to the annual income of the College, we forbear to dwell upon on the present occasion; it will more properly come before us hereafter.

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## THE KING.

THE disease under which the King labours continues its course—controlled, but not arrested, by the remedies which are employed. The cough which came on at the end of last week seems to have been chiefly dependent upon the impeded flow of blood through the left side of the heart, by which it was thrown back upon the lungs, so as to produce congestion. Considerable portions of the lungs are consolidated, from the previous attacks of inflammation with which his Majesty has repeatedly been afflicted, and hence any additional affection adds greatly to the difficulty with which the respiratory organs perform their functions. Had the King possessed sufficient strength to have borne the depletion, we believe that venesection would have been adopted, but the debility rendered this altogether inadmissible, and the speedy supervention of copious secretion from the mucous membrane of the air passages, relieved the state of congestion, though it unavoidably brought on cough. More lately the expectoration has been mixed with blood—a very common occurrence in cases of this description, and dependent upon the impediment to the circulation above-mentioned. The overloaded vessels in this manner become relieved, and except during the paroxysms of coughing, produced by the sputa in the air cells, the sufferings of the royal patient have been essentially mitigated. The debility, which we described in our last number as so urgent, we need scarcely say continues undiminished; and his Majesty, though he partakes of cooling and refreshing beverages, scarcely employs any thing in the shape of sustenance except occasionally a little light farinaceous food. It will perhaps be remembered, that by an addition made to the bill for sanctioning the application of the royal signature by a stamp, it was required that the consent of the

King should be signified by "word of mouth." It is remarkable that this precaution, which was intended to prevent abuse, may possibly throw serious impediment in the execution of the measure, as already his Majesty's voice occasionally sinks into an almost inaudible whisper.

The most unceasing assiduity is shewn in watching every turn of the complaint, and from the constant attendance of the physicians, not a moment is lost in acting upon any indication which may present itself. Day and night some medical person is in the apartment of the King\*; and all that the healing art can accomplish is thus secured to the augnst invalid. How much the progress of the malady may be delayed, and how long life may be preserved by this consummate care, it is quite impossible for any one to say; but we fear that little more is left for his Majesty's medical attendants except the melancholy duty of assuaging the pains of decaying nature, and letting the hand of fate fall lightly on their royal master.

#### HIS MAJESTY'S MEDICAL ATTENDANTS.

WE wish, as much as possible, to protect the characters of our brethren from aspersion; but as we will not become the partisans even of those whom we defend, we must first be satisfied that the attacks made upon them are unjust. Acting on this principle, when it was stated in the *Lancet* that Sir M. Tierney had signed the bulletins without seeing the King, we took steps for ascertaining whether there was any foundation for this charge; and, finding it to be a wanton and malicious fabrication, we immediately gave it the fullest and most explicit contradiction. Nothing can more completely prove the utter worthlessness of the source from

which this most false accusation emanated, than its having been suffered to pass unnoticed by the person against whom it was levelled; but however insignificant the whisper of the slanderer, while breathed in the ears of but a limited portion of the medical profession, yet, when it has been circulated all over the kingdom, in the columns of respectable newspapers, the public will assuredly expect that a calumny so atrocious, and so frequently repeated, will not be allowed to pass without the most indisputable refutation. It is true that the characters of the journals in which the allegation and its denial respectively appeared, render any further explanation unnecessary, so far as the medical profession is concerned, but it cannot be expected that others should be equally well informed on these points. As to the general spirit of the articles in the *Lancet*, on the subject of the King's illness, it has attracted the notice and censure of various papers. Although the malicious parts of these productions probably had another origin, yet we suspect that the merely fictitious and ridiculous anecdotes will hereafter be greatly diminished, by the recent discharge of a Royal page, and the waiting-woman of a noble marchioness.

#### *Opinions expressed in various Newspapers of the Articles regarding the King's Illness, which have appeared in the Lancet and Gazette.*

(From the Times of June 12, appended to an Extract from the *Lancet*.)

"We have published the preceding account, because the subject is important, and all matters relating to it should be fully stated. It is, however, we must say, written in a very bitter spirit, and has very much the appearance of an effusion of personal spleen."

(From the Windsor Express.)

"It is unnecessary to give a formal contradiction to all the contradictory and generally erroneous reports on this subject, with which the public prints are now teeming. We quote the following, however, from an article in to-day's

\* Mr. Nussey has recently sat up with his Majesty about twice a week.

*Lancet, which contains a vast deal of absolute invention and absurdity."*

[From the Morning Post, June 19.]

"As our private communication of last night does not enable us to add any thing material to the above official intelligence, we cannot do any thing more pleasing to ourselves, or, we are persuaded, more gratifying to our readers, than to extract from the *London Medical Gazette* of this day's date the following able and satisfactory article upon the subject of his Majesty's case. *It is a complete and correct exposition of the gross falsehoods and cruelly indelicate observations in which some of our cotemporaries are, on this distressing occasion, so shamefully prone to indulge.*"

## HOSPITAL REPORTS.

### NORFOLK AND NORWICH HOSPITAL.

#### *Two Cases of Nonunited Fracture treated with Iodine.*

CASE I.—J. Codlin, æt. 23, was received into this hospital on the 6th of September, 1829, under the care of Mr. Crosse, having a simple fracture about the middle of the right leg: for the first month the limb was put in splints: he was very restless, constantly moving the leg, so that once or twice the bone almost perforated the skin. At the end of eight weeks, the fracture was found to be not united, and splints were again applied. A week after this time, the limb, to the extent of four inches above and below the fracture, was painted over with Tr. Iodinæ every other day, care being taken not to disturb it; and on Nov. 29d, eleven weeks from the accident, he could raise it without pain. On examining the limb on the 1st of December, the union was found to be slight, and motion was felt at the seat of the fracture. He was again confined to his bed, and the iodine and splints were reapplied: the iodine was, at this time, applied in a more effectual manner than before, by soaking a fold of lint in the tincture, and placing this under the bandage: it was also renewed daily.

14th.—The iodine had been applied up to this date, but as it had caused a good deal of cuticular inflammation, a simple dressing of ung. calamiuæ was substituted.

On the 20th the iodine was again applied, but it soon produced the vesication which it did before, and was altogether discontinued. The limb was, however, kept perfectly still till January 7th, when the bones were found to be firmly united, and the patient was allowed to get up with the leg in splints. In the course of ten days, keeping about

with the assistance of crutches, he was able to bear considerable weight upon the limb; the splints were discontinued, and a flannel bandage applied, to compress the foot and ankle, which were swollen, and also to keep the limb warm. This treatment was continued till the 23d of January, about twenty weeks after the receipt of the injury, at which time he was discharged from the hospital perfectly cured.

CASE II.—Robert Lord, æt. 25, of a spare habit, came to the hospital, with a simple fractured leg, on the 25th of February, 1830. Splints and bandages were applied as usual; and on examining the limb seven weeks afterwards, it was discovered that the fracture was not united. He was again confined to his bed for six weeks, and treated, as in the before-mentioned case, with the tincture of iodine.

On the 27th of May, rather more than thirteen weeks from the receipt of the injury, he was allowed to get up, the leg being firm and the bones well united.

Cases of want of union in simple fractures are peculiarly distressing to the feelings of a surgeon who has taken care that the occurrence could not be attributable to any negligence, or want of skill, on his part: they are cases, the treatment of which the most distinguished members of the profession have studied to render effective, and numerous plans have by some or other of them been adopted; still, however, it is found that they succeed in comparatively few instances, and it is a great desideratum to be possessed of a remedy upon which reliance could be placed. The treatment adopted in the above related cases was recommended by Mr. Buchanan, in a little volume published in 1828\*, and he there states the effect of the iodine to be that of producing increased action of the arteries in the extremities of the fracture, and consequently secretion of ossific matter.

It was observed by Mr. Crosse, in a clinical lecture relating to this subject, that, on account of the vicinity of the tibia to the external parts, a fracture of the leg is peculiarly well situated for the employment of this mode of treatment, as it is better adapted for receiving the impression of any external stimulating application than where the accident happens to bones which are more covered with soft parts.

\* An Essay on Diseased Joints and the Non-union of Fracture, by Thomas Buchanan, C. M. Lond. 1828.

## NOTICE.

The "Query" appended to Mr. Gwynne's case at p. 477 of last number, was intended for a different paper.

W. WILSON, Printer, 57, Skinner-Street, London.



# THE LONDON MEDICAL GAZETTE,

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Medicine and the Collateral Sciences.

SATURDAY, JULY 3, 1830.

## LECTURES ON SURGERY,

Delivered at St. Bartholomew's Hospital,

By WILLIAM LAWRENCE, F.R.S.

### LECTURE LVII.

*Dislocations; their divisions.—Extension and Counter-extension. — Venesection — Tartar Emetic—The Warm Bath.—Old Dislocations—Compound Dislocations—Question of Amputation.*

THE displacement of a bone, gentlemen, from the articular surface with which it is naturally connected, is necessarily attended with more or less injury of the soft parts. For example, with laceration of the synovial membrane, rupture of the ligaments, more or less laceration or bruising of the muscles, or other parts among which the extremity of the bone is thrust when displaced; and dislocation, therefore, even in the simplest form, must be regarded as a somewhat complicated kind of injury. In some instances there is considerable laceration, bruising, and ecchymosis in the surrounding soft parts: some of the muscles which surround the articulation, and which are immediately implanted in the extremity of the bone that is displaced, are absolutely torn through, and muscles or tendons are directly ruptured by the same process that produces the displacement of the bone. When the bone has been displaced it sometimes is carried to a considerable distance from the part with which it is naturally connected: the same force which separates it from its place carries it to a greater or less distance, and may occasion it to lacerate or protrude through the soft parts which naturally cover it externally. Thus, in the case of joints seated near the surface of the body, it may happen that the articular extremity of the bone will not only be dislocated but protruded through the exterior parts, including the integuments, and present itself externally. This constitutes what is tech-

nically called *compound dislocation*, bearing the same relation to simple displacement which compound fracture does to simple fracture. The displacement of a bone may be attended with injury of some important parts seated near to the joint, with the rupture of an artery, with pressure upon the nerves, &c. In the dislocation of the shoulder-joint you are aware that there are large vessels which supply the upper extremity, and the great nerves, which have the same office, go very near to the articulation; so that the head of the humerus, when it is separated from the glenoid cavity of the scapula, may be so seated as to press either upon those blood-vessels or those nerves, and thus a serious complication of the injury may arise. If a dislocation be left to itself, the inflammation, and the swelling which are excited by the injury, slowly subside, and as these go off, the patient recovers more or less power of moving the dislocated bone. Sometimes a considerable degree of motion is recovered in the member although the dislocation remains unreduced. In other instances the limb remains stiff—nearly incapable of motion. The result, in respect to motion of the joint, consequent on unreduced dislocation, differs according to the nature of the articulation. If the dislocation should have occurred in an orbicular joint, the rounded head of the bone moves with tolerable facility in any parts among which it may be placed. The form of the bone gives it a facility of gliding or moving in various directions; and as the head of the bone, in this instance, is usually seated on the surface of a broad or flat bone, we find that gradually the surface of the bone against which it lies accommodates itself to the shape of the orbicular head of the displaced bone, and that, in fact, a new cavity is formed, in which it can play. The head of the bone also undergoes some degree of change from the pressure which it experiences in the new situation, and occasions perhaps the removal of some part by absorption. It does not retain its perfectly natural figure, but does so in a suffi-

cient degree to move with tolerable facility, and in time a considerable excavation will be formed in the surface of the bone, against which the displaced head plays; so that ultimately a new joint is produced, possessing, in many instances, a considerable extent of motion. In the case of a dislocated shoulder which has been unreduced, the new articulation that is thus formed, enables the person to use the limb for all those kinds of motion that are performed downwards, although it is not adequate to allow of the limb being elevated so as to raise the hand to the head.

[Mr. Lawrence here exhibited a specimen of an unreduced dislocation of the humerus. The original glenoid cavity was lost, or nearly so; while a new cavity was formed, suited to the concavity of the scapula. The head of the humerus was altered in figure by absorption, but in this case there was a very regular articulation.]

Not only do you have the original articular surface reduced in size, filled up by soft parts, more or less obliterated, and a new articular surface formed, but you have even new ligaments produced, adapted to the situation of the new joint. I remember dissecting the specimen before us, and here I see a circumstance that puts me in mind of what we then found. There was a strong band of ligament, as broad as my two fingers, and considerably thickened, proceeding from the acromion down to the head of the humerus, and calculated to steady the bone in its situation in the new articulation formed in the concavity of the scapula.

[Mr. Lawrence then presented the following specimens. First, a specimen that was put up wet, where the articulation was seen very perfectly. The cartilage upon the head of the bone was observable, and also the small covering of the new cavity in which it was lodged. The remains of the original glenoid cavity were nearly obliterated. Secondly, a specimen of a similar kind, where also the parts were preserved moist; the head of the displaced humerus was reposing in a new cavity. Thirdly, a similar preparation taken from the hip-joint, where a new cavity was formed near the anterior and inferior spine of the ilium. Mr. Lawrence also presented two engravings, shewing a case of unreduced dislocation, in which the head of the thigh-bone rested upon the foramen ovale of the pelvis. Mr. Lawrence, after pointing out the natural acetabulum, said that in this case the formation of the new joint proceeded so far that there was a considerable deposition of bone round the head of the femur. The bone could not be taken out of the situation without breaking through the new depositions about the foramen ovale; there was a piece of bone broken away in removing it from the body.]

The resources of nature in remedying the

effect of unreduced dislocations are by no means so considerable when the accident occurs in the ginglymoid articulations. The configuration of bones, such as those that compose the elbow-joint, for example, does not allow of their moving and playing upon the surrounding parts in the same way that the rounded head of the bone belonging to an orbicular joint does. The bones are held firmly together by a ligamentous connexion, so that they will become speedily followed in cases of unreduced dislocation of a joint of this kind by ankylosis.

It happened to me, some time ago, to see a gentleman who had undergone dislocation of the elbow-joint about twelve or fourteen months before. He had met with a fall, in consequence of which the elbow was seriously injured. It swelled and became inflamed, and he was informed by a gentleman who saw him in the country, that the joint was inflamed, but that no displacement had occurred. When the inflammation was gone by, he found that he could not move the elbow-joint. When I saw him I found that the radius and ulna were displaced laterally; that the ulna was pushed upon the external condyle, so as to occupy the situation of the radius, and the radius was pushed from its bearing on the external condyle. There was a slight degree of motion on the elbow-joint, though the motion was very imperfect. It so happened that the patient died in consequence of sudden illness, and I examined the body. I dissected the joint carefully. I found the ulna and humerus so perfectly ankylosed that when I had sawn through I could not distinguish between the two bones. Thus a perfect bony union arose in about twelve months from the displacement of the ulna. The radius continued to play in a natural way in a small circular excavation of the ulna; and what was singular, a bit of bone was thrown out from the external condyle, on which the head of the bone turned just as it would have done upon the natural convexity of the external condyle of the humerus. A strong and compact ligament proceeded from the end of the radius, which was a new production. This case occurred in a gentleman 61 years of age.

I saw an instance of dislocation of the elbow-joint, unreduced, in a young man 22 years of age. There was considerable inflammation in the joint, and a general swelling, for which proper antiphlogistic means were used; but when the inflammation had gone by, the patient found that he could not move the elbow-joint. I had an opportunity of examining the state in which it was found at the end of eight weeks after the occurrence of the accident. Now I cannot pretend to state that in this case ankylosis had occurred, because I did not see the parts after death, but we could not produce any motion between the ulna and the humerus at the end

of eight weeks. So that you observe that different dislocations differ materially according to the nature of the articulation in which the accident happens.

Dislocations are not, like many of the other injuries that are incidental to the human frame, capable of being repaired by the efforts of nature. The parts remain in the unnatural situation in which they are brought by accident, unless they are restored by surgical means; and the individual remains either deprived of the use of the joint, or with an extremely limited movement of the part, unless proper assistance be rendered within a short period after the occurrence of the accident. The restoration of the joint to its natural situation, and the recovery of the natural motions of the part, depend therefore entirely upon the prompt recognition of the nature of the accident, and the adoption of proper means quickly taken for replacing the bone in its proper position. It is necessary that the bone which has been displaced should be drawn out of the unnatural situation into which it has been thrown, by an adequate degree of mechanical force; and when this is done, it generally happens that the muscles which are seated about the extremities suddenly pull it back into the cavity which it has quitted. If the femur, for example, should have been thrown on the foramen ovale of the pelvis, and the bone should be extended so as to be pulled out of the cavity, then the muscles will suddenly draw it into the acetabulum. The bone passes, by a kind of sudden motion, a sort of catch, or snap, back into its articular cavity, with a sort of sudden jerk, which is very sensible to the hand of the surgeon, and very sensible to the feeling of the patient, who usually exclaims immediately that the bone has returned to its situation. It may happen, however, that when the bone has been drawn out of the situation into which it has been thrown by the dislocation, that, in consequence of the configuration of the surface to which it is adapted, it does not immediately pass into its place. For instance, if the head of the thigh-bone be brought to the very edge of the acetabulum, you observe there is a ridge that prevents its going into the cavity; so that it is necessary, not only that the bone be drawn from its unnatural situation, but also that the head of the bone should be lifted over the prominent bony margin of the acetabulum. You require that *extension* should be made (for that is the name given to the process), which drags, perhaps, the bone out of its unnatural situation; and also that another force should be applied, after the extending power has acted, in order to direct the head of the bone into the articular surface which it has quitted. It is not sufficient for you to apply force to the bone which has been dislocated. If the humerus be dislocated, and you put a cloth, or apply

pulleys, to the elbow, and draw it, you find that the trunk will follow—you draw the bone, but you draw the trunk also with it. It is necessary, therefore, that you fix the trunk, in order to allow the force applied to the humerus to act on that alone. It is necessary that the bone from which the displacement has occurred should be rendered steady and fixed, in order to allow of the extending force acting entirely upon the displaced bone. This is called *counter-extension*; so that, in fact, in the reduction of a displaced bone, you are to apply the same two kinds of forces that you do in the reduction of a fractured bone—extension and counter-extension.

Now so obvious is the necessity of thus fixing the body before you proceed to drag upon the displaced bone, that we wonder it should have been overlooked; yet we sometimes find that persons who have had a dislocation, describe that they had been subjected to the application of considerable force, and, to use their own words, "they have been dragged all about the room," in order to effect the replacement of the bone. Indeed they might also have been dragged the length of the street, and yet they would have been no further advanced towards the reduction of the dislocation. The principle of counter-extension—that is, the fixing of that part of the trunk in which the dislocation has occurred—is just as necessary as the application of force to the bone that has been dislocated. If you do not do that, the force that is applied to the dislocated bone acts upon the body taken altogether. The extending force may be applied to the bone which has been dislocated, or to some part of the limb more or less remote from the immediate seat of the dislocation. In the hip you may either apply extending force just above the knee, or you may apply it to the ankle, just above the foot; and there is the same difference, in this respect, between the French and the English practice, as I had occasion to point out to you in speaking of fractures. The English apply extending force to the bone that has been displaced, and the French always apply it to the end of the extremity. In cases of dislocation of the upper extremity, they apply force to the wrist; in the case of the hip, they apply it to the foot; and they state that the force is more effectual when so applied, than when employed in the way that we use it. In order to determine which of these two is the better, it would be necessary to make a comparative trial of them both. I do not know that any one hitherto has been at the pains of doing so; and I will only observe, respecting the French practice, that I suppose it is tolerably effectual, because it appears that they succeed in reducing dislocations by the application of simple extension through the medium of assis-



tants, and do not apply the more powerful means that we have recourse to—pulleys; so that I apprehend the application, at all events, of power to the end of the extremity, is at least as effectual as the application of power to the end of the luxated bone.

In the replacement of a dislocated bone, which, I may observe, is technically called *reduction of a luxation*, it is often necessary to employ a considerable degree of mechanical force, and to continue the action of that force some considerable length of time; it is therefore very necessary that you should employ it in such a way as will prove as little injurious as possible to the soft parts on which it acts. You should, of course, endeavour to avoid bruising or excoriation of that part of the body to which the extending power is applied. There are various modes by which this object is accomplished. You may wind a portion of ordinary roller, wetted, round that part of the limb to which the extending power is to be applied, or you may apply loosely round the part a portion of soft wash-leather, and then apply those bandages by which the extension is to be carried into effect. The French seem to be in the habit of covering the part of the limb to which the extending force is to be applied with a piece of rag spread with cerate; that is their mode of protecting it. Then, having done this, the mode by which the extension is usually accomplished, is by the employment of a piece of folded linen, about three yards in length and about half a yard in breadth, and folded so as to bring it to about the width of three inches.

[Mr. Lawrence then took a piece of linen rather wider than that he had stated, but about the same length, and applied to the arm of one of the pupils.]

It must be something of pretty strong texture—stout linen, such as sheets are made of, is the best. Then, the simple mode of using this is to double it, as I here shew you. You pass the two ends through the noose that is formed by doubling it, and the assistants, who are to make the extension, take hold of the ends and drag the limb by them. You are to understand, however, that the surface of the limb must be previously guarded by the application of a wetted roller, or by a piece of soft wash-leather.

Now, in the great majority of dislocations, such is the kind of proceeding that is adopted, and it seems to answer the purpose very well. I may mention that this is the course of proceeding which the French appear to adopt in all instances of dislocation, of whatever kind they may be; but they always make extension by means of a piece of folded linen, applied round the part in the way that I have mentioned to you. Mr. Hey describes a mode of fastening the linen, by which you make the extension, which per-

haps is not very easily intelligible by his description, but which, as I shall shew you, can be made tolerably clear. You take a band just the same as that I have shewn you, which is here represented by this roller [presenting it]; lay it over and cross the ends, leaving them loose. You then bring one end towards your own right hand, and carry it through the circle towards the left. You take the other end towards your left hand, and carry it through that part of the circle which is towards your own right hand, draw it tight, and this gives you a firm hold without any very inconvenient pressure. I do not know that it is better than the other mode, but I believe there is not quite so much strain upon the part where the two ends drag. The plan is very simple, but rather unintelligible till you try it. I puzzled a long time before I succeeded properly, after reading Mr. Hey's description.

In the mode of proceeding that I have now mentioned to you, the extending process consists in the muscular power of the assistants—that is, the persons who hold these ends of the bandages. Now the persons who exert their muscular force in this way are apt to become tired—they do not pull very steadily—they pull a little, and then they relax, or their muscles get fatigued, so that we cannot depend upon their keeping up a regular and steady extension of the dislocated bone for the length of time that may be necessary for reduction. Hence has been introduced the practice of applying extension through the medium of the pulley.

Thus you have the advantage of being able to carry the extension to any degree that you please, and without any risk of its being relaxed or loosened. In these pulleys, the multiplication of the wheels gives you a great mechanical power; so that a single individual, holding the string with one hand, can exert a degree of power that, if he liked, would be sufficient to tear through the soft parts and drag the limb off. Then, in this mode of proceeding you must, in the first place, if you have no hook or any convenient place to which to attach the end of the pulley, just screw a hook into a deal board, or any fixed surface, and then fix one end of the pulley to it. Then the other end of the pulley you must fix to the limb, through the medium of the folded linen, in the way that I have already described;—and then you can produce your extension; bearing in mind, however, that a slight degree of force applied thus, in consequence of the multiplication of the wheels, acts powerfully on the limb, and that you must proceed cautiously. The pulley gives you the power of dispensing with the presence of several assistants; you have a considerable mechanical advantage, and you can produce the extension in a regular steady way, not losing the ground you have once gained.

That is the mode of proceeding with the pulleys; and here is another hook [producing it], which you can screw into a point opposite to that to which the pulleys are attached, so that, in the case of certain dislocations, you have a fixed point for counter-extension as well as for extension; for you understand that the extension and the counter-extension must be both made from fixed points, and must be exactly opposite to each other. These pulleys are easily screwed even into a stout deal board, so that you readily get a fixed point.

There are certain other means adapted to be used with the pulleys, but I do not know that any of the more complicated kinds of apparatus are better than the simple ones that I have just pointed out to you.

[Mr. Lawrence then presented another apparatus, and said]—This is meant to be adapted either to the shoulder or to the thigh. It buckles round the limb, and there are two straps, with a hook, which can be fixed to the end of the pulleys. If this be buckled either on the shoulder or on the thigh, you see that it gives a firm hold. This is the apparatus for that purpose recommended in Sir Astley Cooper's work on Dislocations. This is another contrivance of the same kind [presenting it];—it is a simple piece of stout leather padding, which can be put round the arm, for example. You tie this tightly, and then you can fix it to the cord which is tied to the pulleys. This is a plan devised by Mr. Earle, and which seems well adapted to the purpose.

Such are the modes of applying the extending force; and then the process of counter-extension consists in similar means, but generally in the simple application to the trunk of the body (to the chest, in the case of dislocation of the shoulder—to the pelvis in the case of dislocation of the hip) of folded linen of adequate breadth; which, in the case of the shoulder, should be fastened to some upright bar, some post, or some fixed and firm steady point, so that the chest may be immovably attached to it; and in the case of the pelvis, other suitable means are to be used. About double this breadth of folded linen should be fixed round the trunk; and in the case of dislocation of the shoulder, when you have confined it to a post of proper height, that is all that is required to fix the chest sufficiently for the reduction of this kind of dislocation. I apprehend that the French sometimes extend their principle of the application of force, to a bone distant from that which is the seat of injury—to counter-extension; for, in reading a recent memoir on the reduction of a case in the practice of M. Dupuytren—a case of dislocation of the elbow—it seems, so far as I understand the narrative, that the force of counter-extension was applied merely to the chest; though *we* should have thought it necessary,

in a case of that kind, to apply the counter-extension to the humerus.

In applying the mechanical force which is necessary for the replacement of a dislocation, you are to consider what obstructions there are to prevent the return of the bone to its natural situation. The difficulty arises entirely from the state of the muscles that surround the articulation. The bones present no obstacle; the ligaments which restrain the motions of the joint are ruptured by the dislocation, so that they present no impediment; the only difficulty, then, arises from the condition of the muscles. The muscles which immediately surround the dislocated bone are drawn tight; they are excessively extended by the dislocation of the bone, if they should not have been actually torn through, or ruptured. Now the obstacle arises from the contraction of these muscles. Whenever the bone that has been displaced is moved, the pain which the patient experiences immediately induces an effort on his part, by which the muscles are thrown into contraction, and offer resistance to any attempt to move the limb. The mere approach of a surgeon, and the apprehension of the pain which the return of the bone will produce, is sufficient to throw the muscles almost involuntarily into that state of contraction which constitutes the obstacle to the replacement of the dislocated bone. If the muscles belonging to the joint were at once thrown into a condition of paralysis—if that were possible—you would then have merely to draw the bone out of its unnatural situation, and there would be nothing to prevent it from coming back to its place; and when you have to reduce a dislocation in an individual whose condition approaches nearly to that of one whose muscles are paralyzed, you find that the reduction is extremely easy. Thus in instances in which dislocations are reduced in persons suffering under intoxication, the bones are returned into their place with particular facility.

I remember having to reduce a dislocated arm for a patient in Bedlam: he was a robust, powerful man, in a state of high excitement. When I saw him first, he was making a dreadful noise, agitating himself; and seeing the state he was in, and observing his great muscular power, I thought there would be considerable difficulty in replacing the bone, and therefore I got a number of persons ready, and took all the necessary previous precautions which would be required in the event of such difficulty. But as I was putting the patient in a proper position—confining his chest, and putting on a cloth for drawing the arm—I observed that he took little heed of what was doing. He went on raving and crying out according to the ideas floating in his head. The muscles were soft—they were not excited to contraction; he was attending to other things, and

when I came to make extension the bone went in immediately, and seemed hardly to require the exertion of any force.

In writers we often find it stated that the muscles which surround the joint should be relaxed—that we should place the limb in such a situation as to relax the muscles, and thus to prevent their contraction from impeding our efforts. Now it is more easy to give this rule than to follow it: in fact, I believe we cannot obtain much advantage in that way. We must employ mechanical force sufficient to overcome the contraction of the muscles; and I believe it will be found practically that we must do that with very little reference to the particular direction of the muscles, or very little attempt to relax them; indeed, if we put the limb in any particular position, we shall find that we relax some muscles, and that others will still be in a state of tension; so that I do not know that we can do much by attending to that point;—indeed we can reduce certain dislocations of the bone quite in a different direction. An ordinary dislocation of the shoulder is reduced with the arm at right angles to the body; but we may reduce it by putting the heel in the axilla and drawing the humerus downwards, in a line parallel to the body, which is quite opposite to the other mode. We have, therefore, to apply a mechanical force adequate to overcome the power which, by the contraction of the muscles, retains the bones in an unnatural situation. Now, of course we must apply this according to physiological principles. I do not mean to tell you at once, suddenly to apply force, at the very commencement, that should overpower the contraction of the muscles. If you were to attempt this purpose at once, you might perhaps tear through these muscles, and you might drag off the limb. The muscles will not give way at once; and there are two points that may be attended to. The voluntary muscles will not continue in a state of contraction, except in consequence of the continued effort of the will; if, therefore, by conversing with the patient—by asking him questions—by directing his attention to other subjects, and keeping it off as much as possible from what you are doing and from his own state—if you take off the attention of his mind from the condition of the joint—you will thereby diminish the force which the muscles exert. By suddenly asking a person a question when extension is going on, you may produce perhaps, at the moment, such a relaxation of the muscles as will allow the bone to go into its place; at all events, in that way you will very much diminish the extent of the force which you have to overcome. Another point is, that the contraction of the voluntary muscles is limited in point of duration. They soon become fatigued, and the fatigue speedily rises to such a pitch that the patient

cannot continue to exert the power by any effort of the will. This you may easily convince yourself of, by holding out the arm at a right angle with the body. You find that the deltoid muscle, which sustains the arm, gets so fatigued that no effort you can make will enable you support the limb in that condition for many minutes. You may therefore employ any moderate force, in the first instance, in extending the dislocated bone; that degree of force will put the muscles in action, and the continuance of that exertion soon fatigues them; so that by augmenting the force in a slight degree, never carrying it to such an extent as to run the risk of producing any prejudicial consequences, you will thereby fatigue the muscles; and you must do this rather than drag or overpower them by main force. That is the point that you have in view, and it is matter of little consequence whether you occupy ten, twenty, or thirty minutes in reducing the dislocation; but it is of great consequence not to employ excessive force—not to run the risk of bruising parts to which the extending means are applied, or lacerating those on which the extension may operate opposite to the dislocation. There are some instances in which the obstacles to the reduction are so considerable that it is found necessary to employ some previous measures for diminishing the power of the muscles. This is the case generally when we attempt to reduce dislocations of long standing; it is the case when we attempt to reduce dislocations that have taken place in very robust and muscular individuals; and it is also the case in attempting to reduce dislocations of the hip, where the difficulties are always considerable.

We employ certain previous measures for diminishing the force of the muscular opposition; and these measures are three in number—*venesection*; the *exhibition of tartarized antimony* in nauseating doses, or in such quantity as to make the individual actually sick; and the *warm bath*. Of these three measures, *venesection* is the most powerful, and the warm bath the least so. You may open a vein and take a large quantity of blood from the arm, before you commence the reduction. You may have a solution of tartrate of antimony ready to give the patient; administer a spoonful of it as soon as you have finished the bleeding, and then proceed to apply the apparatus for the reduction of the dislocation. Some persons put the patient into a warm bath, the temperature being so great as to produce a very considerable perspiration; and allow the individual to remain in that some time before the reduction of the dislocation is commenced.

I had occasion, some time ago, to reduce a dislocation of the arm in a very strong person—in a gentleman, to whom the accident happened about fourteen days before an attempt was made at the reduction. I had



reason to expect that there would be considerable difficulty experienced. I took a large quantity of blood, I think somewhere from twenty to thirty ounces, from his arm. I had a solution of tartrate of antimony in a bottle containing ten grains, and I gave him a dose as soon as the bleeding was finished, and I then commenced the extension. He was not rendered faint by the bleeding, and the tartrate of antimony did not produce nausea or sickness, although, before the process was at an end, he took the entire ten grains. Although the extension had lasted from twenty minutes to half an hour, I found that the bone was not at all moved from its situation, and the patient was neither faint nor sick, and I therefore found it necessary to open the arm again, to let the bleeding from the vein be renewed, and continued till he became extremely faint; the action of the heart ceased; he became covered with a copious calm sweat, and then the bone went in immediately.

I should recommend you to have recourse to this preliminary measure. In cases where you may anticipate considerable difficulty, you had better weaken the patient; diminish the power of the muscular contraction before you begin the violent process of extension. There is less risk of mischief to the patient (supposing he be a robust individual) from a full bleeding, than from the degree of violence which it may otherwise be necessary to employ. In doubtful cases, therefore, I think these previous precautions are necessary.

A question arises as to the length of time after an accident at which the reduction of a dislocation may be fairly attempted with a reasonable prospect of success. In the first place, it is very clear that the sooner you attempt the reduction after the accident, the greater is your chance of succeeding. The difficulties increase with every day that the reduction is delayed; and in practice it would be desirable that we should have some definite rule—that we should know at what length of time, at what number of days, or at what number of weeks, we may expect to reduce this or that dislocation. Now surgical authorities differ in some respect upon this point: Sir Astley Cooper states that eight weeks is the limit in the case of dislocation of the hip, and three months in the case of dislocation of the shoulder; and that it would not be expedient to attempt the reduction of a dislocation after this period in these two instances. It is true that dislocations have sometimes been reduced after a longer interval of time than he has mentioned; it is also true that attempts at reduction have in many instances failed, even at shorter periods of time than this. In some cases it is stated that very serious prejudicial consequences have resulted from attempts at reducing old dislocations; and, in fact, if such

consequences as those described were occasionally liable to occur, it would become a doubt whether it was at all expedient to attempt to reduce dislocations of certain standing. A surgeon of the Hotel Dieu, of Rouen, has published a memoir in a periodical work, which is called "*Répertoire Général d'Anatomie, &c.*" representing his proceedings in the reduction of some old dislocations, and he narrates certain formidable results that have taken place in some instances. These cases, which are five in number, shew that in the course of his experience, reduction of the shoulder-joint after eleven or fifteen days, five weeks, and seven weeks—and reduction of the elbow-joint of twenty-seven days standing, was attended invariably with bad success. The first patient died of rupture of the axillary artery; the second and third were seized immediately after the operation with palsy of the arm, from which the former never recovered at all, and the latter but very imperfectly—and hence the brachial nerves must have been injured; the fourth was attacked with palsy of the entire side, and died of inflammation and softening of the spinal cord; and the fifth suffered laceration of all the soft parts around the elbow-joint, and of the arteries also, and he thinks that the patient probably lost entirely the use of the fore-arm. In a subsequent number of the work (that is, the first number of the seventh volume) there is a very valuable paper, containing an account of the practice at the Hotel Dieu, particularly of Dupuytren, in respect to this point, and exhibiting a different result from the one I have mentioned to you. In this paper a great number of cases are recorded, in which dislocations of the hip, and shoulder and elbow, had been reduced at various periods from the occurrence of the accident, up to so late as about thirteen weeks. The compiler of this report (for it does not proceed from Dupuytren himself) mentions, that wherever unfavourable results had occurred in certain cases, they might be ascribed to the injudicious means that had been adopted in those instances, or to the neglect of certain precautions that were necessary to insure success. He mentions, that in the reduction of what we may call old dislocations, they in the first place cover the articulations which have suffered the accident for some days previously with poultices, and add to these poultices, what I suppose some of us will doubt the efficacy of—sedative or narcotic herbs. They bleed the patient previously to operation, and especially if he is a young and plethoric subject; and they put him in a warm bath immediately before the reduction of the dislocation is attempted. With respect to the mechanical means of proceeding, as I have already mentioned, they employ extending force at a part of the limb distant from the situation of the dislocation. They

employ merely pulling by assistants, and do not use machinery; and they proceed in that cautious and gradual manner of making the extension which I have mentioned to you as proper under all circumstances, conversing with the patient, to elude the action of the muscles in the way I have already indicated to you. The result of this practice seems to be very successful in cases that have occurred at the Hotel Dieu, at Paris. The whole of the cases recited in the memoir are not instances that happened in the practice of Dupuytren: of twenty-nine successful cases, six are extracted from the experience of other surgeons—namely, one by M. St. André, of reduction on the sixteenth day; two by Desault, on the forty-fifth and ninetyeth; one by Delamotte, on the sixtieth; one by M. Sanson, on the ninetyeth day (that was a dislocation of the humerus); and one from the Memoirs of the Academy of Surgery, where the reduction was accomplished at the end of the second year. The twenty-three successful cases which remain were treated by Dupuytren, and in these the duration of the dislocation varied from fifteen to eighty-two days. Now this clinical report is a valuable one, because it does not consist, as I understand it, of a selection of cases, but gives you the entire cases that occurred within a certain time. It appears that the attempts at reduction only failed in two or three instances, and were completely successful in about thirty cases, and those at various periods, including some of very long standing, as I have already mentioned. The analysis of the memoir that I have just mentioned is contained in the Edinburgh Medical and Surgical Journal, No. 102, and the collection of facts and the practical rules that are given, seem to me well worthy of your attention.

I have merely a few words to say to you respecting one other part of the subject, which is, *the treatment of compound dislocations*. These cases fall very much under the general rules that I have already had occasion to explain to you as applicable to the treatment of wounded joints. If the end of the dislocated bone be protruded, and there be a wound of the integuments, you must replace the bone in its situation—you must approximate the edges of the external wound—and you must keep them united. You would close them either by the application of adhesive plaisters, or by covering over the external wound with lint dipped in the blood flowing from the wound, allowing it to dry and form an external encrustation.

These were heretofore considered cases for amputation; but a greater reliance upon the resources of nature, and a more judicious mode of treatment, have shewn that the majority of these cases admit of very perfect recovery. It is a very formidable thing to see a joint torn open, and one bone belonging to it protruding externally; but

when we have reduced the protruded bone, when we have closed the external wound, the appearance of the accident is very different, and much less formidable. There are numerous cases on record in which a frightful looking accident of this kind was not only recovered from without amputation, but was restored with a considerable degree of motion of the injured joint. It is true that the injury sometimes is so extensive, that it becomes a question whether an attempt should be made to save the limb, or whether it would not be better to proceed to amputation. This must be determined by considering the nature and the extent of the injury—the constitution of the individual: for even if there were a very extensive injury, and one of very formidable appearance, that would not be a sufficient reason for proceeding to amputation, if the accident occurred in a young person—one of sound constitution, and who was placed under such circumstances as were favourable to recovery; while, on the contrary, a similar injury occurring in a person more advanced in years—one of unsound constitution—and who was placed in a large hospital, or perhaps in a crowded dwelling in a large town, might be a case for amputation. A very large external wound—that is, a very considerable exposure of the joint, and not only an external protrusion, but fracture and comminution of the bone, laceration of the surrounding muscles, and wounds of arteries—these are circumstances of complication that might probably render immediate amputation an advisable measure. It is necessary to weigh these circumstances well at the time of the accident; in the first place, that you may not, by amputating a limb that can be saved, mutilate the person unnecessarily;—and in the next place, that you may not put the life of the individual in hazard by omitting an operation that ought to be performed. If, in a very serious case of this kind, you attempt to save the limb, the patient incurs the risk of life, in consequence of the violent inflammation, suppuration, and perhaps mortification, to which the injury leads. He incurs more risk of the loss of life from the repeated suppurations—from the drain which takes place on the system—from the continuance of the discharge—from the caries which arises in the bone—and from hectic affecting the system, than from amputation. These various results, and the possibility of them, must be carefully weighed, before you determine on the course of proceeding in particular cases; and you must carefully consider, not only the part injured, and the extent of injury thus inflicted, but also the nature of the patient's constitution, and the situation in which he is placed, as favourable, or otherwise, to the process of restoration.

## ANALYSES &amp; NOTICES OF BOOKS.

“ L'Auteur se tue à allonger ce que le lecteur se tue à abrégier.”—D'ALEMBERT.

*On the Motions and Sounds of the Heart.*

By D. J. CORRIGAN, M.D. From the New Volume of the Transactions of the Association of Fellows and Licentiates of the King and Queen's College of Physicians in Ireland.

[Continued from p. 207.]

HAVING, in a former number, given an analysis of that part of Dr. Corrigan's paper which treats of the *motions* of the heart, we purpose now to proceed with his views of the *sounds* of that organ; and, in conclusion, to consider what influence these views will have in the elucidation of heart diseases; in a word, how we are likely to be gainers by the new doctrine.

But before we go any farther, we wish to apprise the reader that, inadvertently, in our former notice we omitted to state that the merit of these investigations is not to be wholly ascribed to the gentleman whose name stands in the title; we should have distinctly mentioned his two very able coadjutors, Doctors Percy Hunt and J. C. Ferguson, from whose valuable assistance in conducting the experiments the author states that he derived the greatest advantage. They were consulted early on the plausibility and propriety of his speculations, and entered at once upon the inquiry with an ardour and an earnestness highly creditable to their zeal for the discovery of truth.

If the ear be applied to the chest, or, better still, if the stethoscope be employed over the region of the heart, two remarkable sounds are heard: one, a long, dull, but distinct sound—the other, a short, sharp, and louder one. According to Laennec, “at the moment the artery strikes the finger, the ear is gently raised by a movement of the heart synchronous with that of the artery, and accompanied by a sound rather dull, yet distinct. Their synchronism does not allow us to doubt that the phenomenon is owing to the contraction of the ventricles. Immediately after, and without any interval, a sound louder and analogous to that of a valve which is raised, or the lapping

of a dog, or a whip, announces the contraction of the auricles.” We quote the passage, that the reader may have clearly before him the notions of this celebrated pathologist on the sounds of the heart, and their causes; but, according to Dr. Corrigan, it is full of error. The alledged mistake of supposing the pulse and the heart's impulse to be synchronous, has been fully exposed in the first part of our analysis; and the causes which Laennec assigns for the sounds of the heart are asserted to be equally erroneous. That the long sound is neither synchronous with the pulse nor produced by the contraction of the ventricles, will, our author says, be evident to every one who wishes to observe patiently and to reason without prejudice. “To ascertain the relation which the sound bears to the pulse,” says Dr. Corrigan, “we selected, from very extensive dispensary practice, those patients who happened to have remarkably slow pulses. We also examined repeatedly and carefully the heart's action in the horse; which animal afforded peculiar facilities for our purpose. The heart, when in health, beats only forty times in the minute, and the sounds are distinct. Though perfectly satisfied in our own minds of the truth of our observations, still we looked for further evidence. Each of us selected, from among his friends not in the profession, a person on whose delicacy of ear and accuracy of observation he could rely. Of these, one was a gentleman who has been blind for some years—a man, however, of the highest mental powers. It is needless to remark that from this peculiar circumstance (loss of sight) his other senses have become extremely acute. The persons thus selected were carefully kept in ignorance of either our own views or those entertained by others. After they had, to their satisfaction, distinguished the two sounds and the impulse, through the stethoscope, they were instructed to lay a hand on the pulse and note the order in which each phenomenon seemed to them to occur. The opinions expressed by these persons were as follow. ‘The impulse and dull sound came before the pulse. The dull sound had ceased when the pulse struck the finger. The short sound came exceedingly quick after the pulse. The first sound was long; the second short, not half the length of the



first; and there was a short interval between the two sounds.” These observations are, indeed, of the greatest value; they put the question beyond all doubt, for it relates, after all, simply to a matter of fact.

The explanation assigned by Laennec for the long dull sound, next demands our attention. He says it is owing to the contraction of the ventricles; his proof is that it comes with the impulse, and that the impulse and pulse being synchronous, there cannot be a doubt that the long sound is owing to the cause stated. The reader need not be told in what the fallacy lies. The pulse, for reasons even acknowledged by Laennec, marks the instant of the contraction of the ventricles. The dull sound comes before the pulse, therefore before the contraction of the ventricles; the contraction of the ventricles, consequently, cannot by any possibility be the cause of the dull sound. Again, Laennec should have known that, were his explanation the true one, the sound in question and the contraction of the ventricles should be of equal duration. Now every one knows who has opened a living animal, that the ventricles contract with extreme rapidity; or even without such inspection, the pulse indicates the velocity with which the ventricles act. Were Laennec's opinions correct, the sound should only occupy the time of the pulse, the duration of which is not appreciable; but instead of being equally brief, the sound is long—*prolongé*, as he himself terms it. We must conclude, then, that the cause of the long sound assigned by this eminent observer is inadequate and erroneous.

The opinion of Dr. Barry is, that it is caused by the dilatation of the auricles; but he goes upon the assumption that the heart's impulse marks the contraction of the ventricles, and of course the dilatation of the auricles. Dr. Corrigan maintains that the impulse marks the contraction of the auricles, and he seems (to us, at least) to render it extremely probable that the long dull sound which accompanies the impulse is caused by the *rush of blood into the ventricle* when the auricles contract;—and it may be added, that the sound can be imitated closely by injecting water into the ventricles of a dead heart, the heart being kept under water during the experiment, in order

to exclude the air, and to prevent even the shadow of deception.

“A case,” says Dr. C., “has lately occurred to us, strikingly illustrative of the correctness of our views. The signs of diseased heart are marked with an uncommon degree of clearness—namely, *increased sound and impulse* of the right side of the heart, diminished impulse of the left, when, in place of the first sound, there is long and intense *bruit de soufflet*, then pulse. Our diagnosis was, narrowing of the left auriculo-ventricular orifice, with hypertrophy of the right auricle. The effect of the narrowing is, to convert the long dull sound produced by the rush of blood through the full-sized opening into the *bruit de soufflet*. The opening being narrowed, the left ventricle is not filled as quickly as it otherwise would be; hence the *bruit de soufflet* is long, and the antecedence of the sound to the pulse is marked by an interval more distinct than we have met on any other occasion. How can we explain the stethoscopic signs of this case on any of the theories of the heart's action and sound hitherto offered? In no way that we are aware of. They totally contradict Laennec in the order which he gives to the contraction of ventricle and auricle; for, were the order assigned by him the true one, the *bruit de soufflet* should come *after* the pulse, when the mitral valves are diseased—should accompany the pulse when the aortic valves are affected. It does neither; it precedes the pulse, taking the place of the natural dull sound. Were the dull sound produced by the contraction of the ventricle, we ought to have it in this case accompanying the pulse; but it is altogether absent: it cannot therefore be produced by the action of the ventricle. The pulse, in this case, terminates the *bruit de soufflet*, just as, in the healthy heart, it terminates the natural dull sound\*.”

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\* The patient, we are informed in a note, died, and the following were the memoranda of the *post mortem*:—“The pericardium contained about ten or twelve ounces of clear serum. The heart was very large, and deeply injected with blood. The ventricles were nearly healthy; the right rather *thinner* than natural. The right auriculo-ventricular orifice was of full size and healthy; the left diminished to about double the diameter of a goose quill; the edges of the opening on the auricular side presenting a bony spine surrounding the orifice. The great bulk of the heart arose from the size of the auricles: the right auricle was much dilated, and its muscoli pectinati re-

It is important to observe, that in many persons examined by Dr. Corrigan and his confrères, the termination of the sound and the pulse were apparently synchronous. But it should be kept in mind that the pulse is felt at the moment the ventricle begins its contraction, and that this contraction is quick as thought after that of the auricle; so immediate that it was asserted by an eminent physiologist that the two contractions were simultaneous. The consequence is, that when the heart is beating quickly the pulse strikes the finger while the sound yet lingers on the ear. There is, moreover, to be taken into account in such cases the difference between the two sensations of sound and touch. The first travels slowly, and will hang on the ear after the cause which produced it has ceased to act. The second comes and goes with electric rapidity. In persons whose hearts beat slowly, and in the horse, it can nevertheless be distinctly perceived that the sound in question terminates at the moment when the pulse rises.

It is by no means so easy a task to assign an equally adequate and satisfactory reason for the second sound. Accordingly, various theories have been broached, in order to account for it. Laennec says that the second sound is caused by the contraction of the auricles. Mr. Turner attributes it to the falling back of the heart upon the pericardium after it has been carried forward by each contraction. Dr. Williams supposes that during the systole of the ventricle, the muscoli, which hold the valves, are stretched to their full extent; that as soon as the ventricle ceases its contraction, these muscles act with energy, and bring the valves with such a sudden slap against the sides of the ventricle as to produce the sound. Dr. Barry says, the second sound is produced by the dilatation of the ventricles. Each of these statements Dr. Corrigan endeavours to confute; but we shall not follow him in his work of demolition;

at present we wish to view him setting up his own "exquisite reason," or "reason good enough," instead. So we shall permit him to proceed.

"We saw the insufficiency of all the causes hitherto assigned for this second sound. We first examined the auricles, to ascertain whether it might not be produced by them. It could not be produced by their contraction, for their contraction is synchronous with the dull sound, anterior to the pulse, and of course anterior to the short sound. We turned then to their expansion, on the supposition that the currents of blood from the veins coming together suddenly in their cavities, immediately after their contraction, might produce it; but this we gave up, for the flow of blood from the veins into the auricles is slow, and can produce no short sound such as the one under consideration. We have already noted the extreme regularity of the second sound; but were there any sound produced by the flow of blood into the auricle, it ought to be very much influenced by posture, and should be for ever varying, as the circulation might be hurried or retarded. We turned now to the valves, first to the auriculo-ventricular, on the supposition that at the moment the ventricle contracted it might drive these together, the sudden slap producing the sound. But here again we were met by two objections: we could not produce the sound by making the valves act in the dead heart; and were it caused by them, they ought to make it in the dead, as in the living heart. And, secondly, before the ventricle can send blood into the aorta, it must close these valves. The sound, if depending on their closing, should come before the pulse; it, however, does not, but immediately after it. These valves can therefore in no way, either by coming together, or by opening, as on Williams's theory, produce the sound. Neither can the aortic valves; their action in coming together is merely from the reacting elasticity of the aorta; they touch by a very small surface, and they are exceedingly delicate in the smaller animals, and in the fœtus, in which, nevertheless, the second sound is distinctly heard. For these reasons it appeared to us impossible that they could produce this sound. We were so often disappointed in our attempts to discover the cause of it, that we had almost given it up in despair,

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sembled the columnæ carneæ of a ventricle in size and strength; the left auricle was still more enlarged, forming at its upper part a pouch, almost double the size of the ventricle, and also possessing parietes very much thickened." There was besides, "a growth of polypi within the left auricle: these grew from the valves on the margin of the opening, and one of them hung down directly over it, about an inch long, and of the thickness of the little finger,—it was in the process of softening, containing puriform fluid in its centre."

when, having ascertained that it is imitated most exactly by the falling back of a valve upon its birth, and that the sound is precisely what may be produced by the single impulsion (as in the case of the valve) of two surfaces meeting, we turned to the heart to discover if there were among its actions any thing similar.

"The ventricle contracts powerfully, and as already said, with the rapidity of lightning, not slowly, as Laennec strangely asserts. The impulsion of the internal surfaces against each other, must, from such a contraction, be sudden and strong; and we might *à priori* expect it should resemble strongly that produced by the flapping of a valve, or what is the same thing, the striking together of two non-vibrating surfaces. The supposition that the short sound was caused by the impulsion against each other of the sides of the ventricle required experiment to support it, and to institute a satisfactory one was not easy. At length the following was adopted. Into the pulmonary artery of a heart taken from the body, a gum elastic tube was fastened; the two venæ cavae were tied, after all the air had been carefully expelled from the cavities of the heart, and all were immersed in water. The loose extremity of the tube was attached to a small pump, which, as well as the gum elastic tube, was filled with water. Our object was to bring the sides of the ventricles together with an impulsion as quick as its own action could. After we had distended the ventricle, by pressing down the piston of the pump, we produced a vacuum by suddenly checking and drawing the piston quickly back. The influence of this action was of course extended to the ventricle. The weight of the external water and atmosphere immediately acted upon the outer surface of the ventricle, expelling the fluid from it along the tube, and bringing its sides together, precisely as if by an inherent power in themselves. Each time that they thus came suddenly together, the impulsion produced a short sound, imitating, with the greatest nicety, the second sound of the heart. We could make the sound weaker or stronger, according to the force with which we made the sides approach each other. We repeated the experiment on the left ventricle with the same result. It is obviously a matter of indifference whether the power that brings the two

sides together be, as in this experiment, on the dead heart an external power, or whether it be, as in the living, its own inherent contraction.

"Let us now examine, with regard to the time of its occurrence, this cause assigned for the second or short sound. It is heard, as already stated, immediately after the pulse; indeed, so instantaneously, that one of the individuals before alluded to, hesitated whether he should not pronounce it synchronous with the pulse. In a slow beating heart, and in the horse, that it follows the pulse, is easily ascertained. Taking it for granted that the cause assigned by us is the true one, its coming thus after the pulse, and with the greatest rapidity, is precisely what we should *à priori* expect. Its shortness too, and the peculiar sensation it conveys, is what would be produced by the impulsion of surfaces, whose very meeting, while it creates the sound, prevents the prolongation of it.

"It may be objected to the causes assigned by us, that the ventricle does not bring its sides together: we are aware that it is asserted by Senac, and other physiologists, that it never empties itself. This, like many of the positions we have received on the authority of others, is without proof. It would not be fair to form an opinion on this subject from the state in which we find the ventricles after death, for the circulation in the last moments of life is always irregular. Were any, however, to be founded on their state, it would certainly be in favour of their emptying themselves completely, for we generally find the left ventricle empty. If it were not able, as Senac asserts, to bring its sides together, there should remain some blood in it, no matter how the animal was killed. The right ventricle, it is true, almost always contains blood, but this depends on a cause which it would be foreign to the purpose of this paper to go into.

"We know that the action of the ventricles is sudden, quick, and powerful. What is there to arrest that action, so as to prevent its sides meeting? Not the last remaining portion of blood supposed to be contained. In the frog, in which, as we have already stated, the heart takes its colour from the presence or absence of blood, the ventricle becomes at the end of each contraction perfectly pale, showing in



the most satisfactory manner that it brings its sides together, expelling all the blood from between them. When we see the ventricles of cold-blooded animals contract thus, we surely must admit that the ventricles of the warm-blooded, which act with much greater energy, possess like power. We cannot suppose that at the moment before the sides come together, the ventricle stops its contraction by any inherent power. There must be some obstacle to check it at the instant when its systole is at its height, and that obstacle, we believe, can be found alone in the meeting of its sides. The assumption that the ventricle does not bring its sides together, at the termination of each contraction, is totally unsupported by any proof, is contrary to reason, and directly contradicted by experiment.

"It is, however, not necessary for producing the sound in question, that every drop of blood in the ventricle should be expelled: a small portion may remain in the interstices of the columnæ carneæ, or protected by the muscoli papillares; but this will not interfere with the production of the sound. In our experiment already described, with the dead heart, it is not probable that in drawing back the piston we removed the fluid so perfectly as to bring the inner surfaces of the ventricle in contact through its whole extent, and yet the sound was heard and loud. Indeed, as far as we could judge, we should be inclined to say that it was not produced near the apex, but by the comparatively smooth surface of the ventricle near the base."

We turn with a superior interest to that part of the paper in which the new view of the heart's action is applied to practice. The recency of its adoption, we agree with Dr. Corrigan, must be admitted to plead excuse for the brevity of its illustration; yet there are many points connected with it which claim our special notice.

Dilatation of the ventricles, thickening of their parietes, and the union of these two affections, constitute, as is generally known, the most frequent diseases of the heart. Loudness of the first sound, according to Laennec, is the chief diagnostic sign of dilatation. This is very true; but why is it so, on Laennec's principles? Nothing can be more easy than to account for the loud long sound on the principles advanced

by Dr. Corrigan. The sound being produced by the rushing of blood into the ventricles, it will evidently be loud in proportion to the size of the cavity. But Laennec attributes the sound to the action of the ventricles, and these, in the disease of which we now speak—passive aneurism, be it remembered, are much thinner, and of course weaker, than in the healthy condition: how then can the sound be louder?

In passive aneurism, the heart's impulse is absent or diminished. This can be explained on either view. On Laennec's, by supposing the impulse to be in proportion to the strength of the ventricle; on our author's, by the rush of blood, which causes the impulse, being lost in a larger cavity, over a larger surface.

In simple hypertrophy of the ventricles, the sound is dull; when carried to an extreme degree, there is a shock without sound, and the second sound (misnamed by Laennec, the sound of the auricles,) becomes, according to him, very dull, and scarcely heard. On Laennec's explanation the sound should be loud, obviously; whereas, on Dr. Corrigan's, it is, as it should, *a priori*, be expected. The thick fleshy walls will only transmit *un son étouffé*. If the increased growth of the sides diminish the cavity much, the sound will be altogether lost, from the smallness of the space and the thickness of the walls; there will then be, as Laennec says, an impulse without sound. The reason why the second sound is dull in hypertrophy need scarcely be mentioned, it is very obvious if we admit the principles of our author.

In the active aneurism of Corvisart, in which we have both dilatation and hypertrophy, the signs usually laid down are, strong impulse and loud sound. The latter sign is manifestly in accordance with Dr. Corrigan's views; but that a strong impulse always accompanies hypertrophy of the ventricles, he has, he assures us, ample reason to doubt. "We have seen cases of hypertrophy to the most extreme degree, without impulse even equal to the natural, and some even without any. In one instance, this was particularly striking. It might, perhaps, be supposed, that having taken up a particular view, we were likely to see cases with prejudiced eyes. But no supposition of this kind can apply in the case al-

luded to. The notes of it were taken in February 1829, twelve months since, when we had not the most distant idea of the views now offered. The case was a very obscure one, and hence the particulars were taken with accuracy. Among them is the following remark:—‘The impulse of the heart could not be at all felt by the hand, and but very indistinctly perceived by the stethoscope.’ The subject of the note died in the following April. He had been ill three years. The heart was dilated, and excessively hypertrophied. Another case occurred in June last. The note of it says,—‘Impulse of the heart increased, but not much, and felt against the middle of the fourth rib.’ This patient died in the same month. The heart was, perhaps, the largest we ever saw; its walls enormously thickened, and its cavity increased. Its action, too, was energetic, for the note of the case says, the pulse was ‘full and strong;’ yet the impulse was not remarkable. Other cases have more lately occurred, of a great degree of hypertrophy, without impulse. The fact is undoubted, that hypertrophy, with dilatation, and to an extreme degree, does exist without impulse. \* \* \* Our opinion is, that when increased impulse occurs, with hypertrophied ventricle, it is incidental; and for this opinion we hope we have given sufficient proof in the cases which occurred to us, and in the admission of Bertin and Laennec\*.”

Our limits will not permit us to lay before the reader a case from Bertin, on which Dr. Corrigan lays much emphasis, as corroborative of his opinions. It shews, indeed, “even to demonstration,” that not only is increased impulse not dependent on hypertrophy, but that the impulse itself is caused, most palpably, by the action of the auricle. This accumulation of evidence, however, appears to us, to be somewhat superfluous; we are, in fact, rather apprehensive that it borders a little on the perilous practice of proving too much. The case to which we refer may be found in Bertin,

“*Traité des Maladies du Cœur*,” &c. p. 334.

It will have been seen, then, from the sketch we have given of the bearing of the new views on pathology, that, if correct, they will throw much light on this important science. We trust it will at least have the effect of calling the attention of the profession more particularly to diseases of the heart, which have been hitherto involved in such mystery. Of Dr. Corrigan and his able associates we take our leave with sentiments of respectful approbation; we cannot but wish them all that encouragement to which we know they aspire; and we have only, in conclusion, to express a hope, that they may be induced to prosecute, with renovated ardour, those inquiries which they have so zealously begun, and without being discouraged if some of their positions should be found untenable: by perseverance they cannot fail to arrive at many useful truths.

Perhaps it may not be inappropriate to append to our analysis of Dr. C.’s paper, a recapitulation of the principal positions which he advocates. With regard to the *Motions of the Heart*, the circumstances are these:—

1. The contraction of the auricles (comparatively slow) takes place first.

2. The contraction of the ventricles, with extreme rapidity, follows that of the auricles.

3. The pause.

4. The impulse does not take place during the contraction of the ventricles, but during their dilatation.

5. The impulse is caused, not by the contraction of the ventricles, but by that of the auricles, and is dependent on the force with which the auricles send their blood into the ventricles.

6. When the auricles contract, the ventricles are dilated, and the heart comes forward.

7. When the ventricles contract, the heart retires.

As to the *Sounds of the Heart*:—

1. The first sound is caused by the rush of blood from the auricles into the dilating ventricles,—and not by the contraction of the ventricles, as hitherto taught.

2. The second sound is caused, not by the contraction of the auricles, the falling back of the heart, or the action of the valves, but by the striking together of the internal surfaces of the ventricle.

And with respect to the *Rhythm*:—

\* “The cylinder renders the impulse perceptible,” says Bertin, “even when it escapes detection by the hand; I have discovered, by means of it, *hypertrophies*, which through any other I should not even have been able to suspect.”—*Traité des Maladies du Cœur*, p. 355.

“Percussion, and the application of the hand over the heart, become, in many cases, of no avail.”—*Traité de l’Auscultation Médicale*, ii. p. 502.

1. The impulse and long sound come first, and are synchronous.

2. The pulse.

3. The second or short sound.

And, lastly, as to the period of time occupied by a single action of all the parts of the heart, Dr. Corrigan is disposed to say, that one half of it is spent in the contraction of the auricles, one-fourth in that of the ventricles, and the remaining fourth in a state of rest. Thus the ventricles, which require it, have eighteen hours rest out of the twenty-four; and the auricles, having less labour to perform, only twelve.

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### HOOR-GLASS CONTRACTION OF THE UTERUS.

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*To the Editor of the London Medical Gazette.*

SIR,

As the only object I have in view is to elicit truth, and to prevent erroneous impressions on the subject of spasmodic retention of the placenta, I shall wave further notice of the case reported by Mr. Moss, and confine myself to a few observations on Sir John Chapman's statement, as he has there, as you have correctly observed, entered on the general question; but in so doing it is not my intention to raise a tempest against his "little bark," for the navigation of which he has created so lengthened a channel, but simply to prove that I have been accustomed to arrive at the uterus without making so long a voyage.

Sir John says, if the obliteration of the os uteri in cases of hour-glass contraction be admitted, it would be difficult to prove his position; and in reply to which I have to state, that it would be equally difficult for me to oppose it, provided it were decided, that so complete a contraction of the os uteri ever occurs so early before the expulsion of the placenta, as his position implies, particularly if it be further conceded, that the vagina in such cases is so far elongated as to equal the length of the arm, "nearly to the elbow;" but as I am of opinion, that neither of these statements are borne out by facts, I trust I shall be able to make it appear, that the remaining part of his position is equally untenable.

If all the cases which have hitherto been considered as instances of hour-glass contraction of the uterus, have been no other than cases of too powerful contraction of that organ, and elongation of the vagina, how comes it that in such cases uterine hæmorrhagy has so frequently accompanied it? as, from reasoning *à priori*, it would be less likely to occur, as contraction is the only means of prevention.

I am obliged to receive as implied that general and regular contraction exists, otherwise Sir John Chapman must admit that the uterus may be affected with "capricious" and irregular action—as such must be the case if the os uteri be so completely contracted as to embrace the placenta without a general contraction of that organ, particularly after the further statement that "in common cases the os uteri is found lying loose in the vagina."

As Sir John proceeds, it is however admitted—thus: "but in the former case the uterus is strangely contracted; and after waiting one, two, or more hours, without pain or any effort at expulsion; either from hæmorrhagy or length of time, you pass your hand into the vagina, and find you have entered a large cavity (for you have no contraction of the vagina); and when your arm is introduced nearly to the elbow, you find a thick close contraction (which has been mistaken for the hour-glass contraction); you dilate it with difficulty, and find a very firm contraction embracing the placenta."

To be consistent with the position intended to be proved, it must necessarily be further implied by the statement now quoted, that a most extraordinary elongation of the vagina must take place, which is not very easily to be comprehended, as in thus contracting the uterus would rather descend into the pelvis than ascend out of it.

The natural length of the vagina is about four inches; and it is well known, that in making a common examination during labour, the os uteri is easily within reach of the finger; and it is contrary to reason to suppose, that in the progress of labour, while the head is strongly pressing down, that any elongation should take place, and I maintain that it does not, and but to a very trifling extent afterwards—only inasmuch as the os uteri had been before forced down.



If Sir John Chapman's position were correct, we should have but little cause for alarm in cases of retention of the placenta, but unfortunately experience has proved the contrary; as, under such circumstances, the patient is in constant danger of hæmorrhagy, which continues until the placenta is expelled, and until which time it is impossible for any but a partial contraction of the os uteri to take place, as every expulsive pain of the uterus has a tendency to dilate rather than contract that orifice, the circular fibres in the natural state never acting but in progression from the fundus to the outer extremity, as the contents of the uterus descend; but the longitudinal extending from the fundus to the os uteri, during their contraction, have the effect, as above stated, of dilating that orifice.

Having now advanced what appears to me to prove that no sufficient case has been made out against the existence of hour-glass contraction of the body, or of spasmodic contraction of the fundus uteri, as represented in my first communication, I shall leave the final decision of the subject to more competent hands; and in the hope that one or other of the many able teachers of midwifery in the metropolis will come forward and set the question at rest—as from having relinquished the practice of midwifery, I have no inclination to enter into a long controversy on the subject. I will, however, before I conclude, confidently assert that in every case wherein I have introduced my hand to overcome such contraction, I have invariably found the uterus resume its regular action, and progressively contract, following the placenta and my hand, as I have withdrawn it, sensibly and considerably below the originally contracted part, and between it and the situation of the os uteri.—I am, Sir,

Your obedient servant,

JAMES HOLBROOK, M.D.

Cheltenham, June 1830.

#### TAX ON THOSE ENTERING THE MEDICAL PROFESSION.

*To the Editor of the London Medical  
Gazette.*

SIR,

SOME anonymous writers have lately appeared in the pages of your journal, asserting or denying, with opposite ad-

dress, the propriety of levying a tax on those entering the medical profession. To exalt and purify the characters of medical practitioners, or to encourage the pursuit of medicine among youths of noble, at least of honourable birth; are the ultimate benefits proposed from increasing the pecuniary demands of an expensive study; and the necessary possession of more money, it is presumed, will introduce a class of gentlemen and scholars, if politeness and erudition, talent and industry, are essentially connected with an abundance of wealth. The exaction of a heavy toll will restrict the admission to men only of substantial means; the master of an ample fortune will become, with wonderful facility, the learned scholar of physic; and gold will confer the admirable accomplishments of a skilful and humane physician, while genius, in poverty and alone, watches from without the lucrative progress of that chosen few. It were strange, indeed, if the legitimate cause of science should be forwarded by impeding the attainment of it; nor is the exclusion of the poor compatible with the notion of rational freedom, or likely to secure a larger proportion either of virtue or of talent; for fools, the vulgar and the vicious, are common to every rank of society. History instructs us, that the arts and learning have been taxed and oppressed just in proportion to national corruption; and we are not fulfilling the duties of honest men and citizens in anticipating a feeble and avaricious policy which might arise from our own decay; for, though every nation must sink into the decrepitude of age, the vigour of prosperity may be prolonged by temperance and manly independence. Science, the copious source of fame and laudable emulation, will be weakened and finally subverted, by limiting, with wanton tyranny, the number of candidates for its honours; and the argument is truly unsubstantial which attempts to maintain that the multitude annually issuing from the schools of medicine oppresses itself—since, in a multitude, a just ambition is readily fired by collision, and various abilities are more easily discovered and produced; but when honours are usurped by the power of wealth—pride, sloth, and stupid arrogance are the inevitable consequences. Security makes men careless and supine; strife and lively competition;

elicit genius and animate success. The poor have a right, if that right is consistent with the common good, to be encumbered with as few restrictions as possible in furthering their individual advance; and he who oppresses the poor is undermining himself. Real and active worth is the growth of no particular place and set of men; and there can be little doubt that, by imposing a duty on those entering the medical profession, some personal talent must be incapacitated, and no increase of wisdom can be ensured.

These observations are neither visionary nor unadapted to the practice of the world. This is the truth: in a populous and free nation, where each man is endeavouring to secure and enlarge his own prosperity, the community cannot be benefited by opening the highest honours only to a wealthy few. The rejected crowd becomes either useless or unruly; a chasm, somewhat inconvenient, is interposed between the rich and the indigent; and it becomes the part of prudent policy not to disregard an evil, minute perhaps in its present importance. Moreover, the assessment of the medical profession cannot but check, however slightly, the advancement of knowledge.

I am not willing to encourage even the wish that humiliation and oppression should fall on the basest of mankind; but were the want of money to exclude a knave and an illiterate braggart from the ranks of an honourable profession, it might justly raise a smile of sarcastic indifference. We blush, however, for ourselves, when the medical press affects to reveal the affairs of royal privacy, and, with Bæotian clumsiness, treats of ministers and princes in the rude tone of plebeian censure. The same pen which once attempted to asperse the professional reputation of a Travers or an Earle, now assuming a singular degree of boldness, perhaps of self-delusion, flings at the throne the same words of abuse which would be justly resented by the members of a private family. "The King's advisers"—such is the audaciousness of that writer—"are amenable to law. Who are his (*Majesty's*?) responsible advisers? Is his Majesty enthralled and deluded?"—and an abstract truth is dexterously assumed as the position for founding an allegation against the attendants of the Royal pa-

tient. From such language we turn with disgust; and should the scandal be converted into truth, our ears would still be offended by its coarse vulgarity. (*See Lancet*, June 12, 1830.)

To conclude: the inconstancy of fortune and the liveliness of hope chequer; in alternate vicissitudes and unequal proportions, the varied measure of our lives; and the progress of the humblest individual is characterized by calamities or prosperity, is illustrated by steady virtues, or obscured by an instability of intellect and conduct. The morning of life is enlivened with the bright anticipations of remote success; the aged are willing to discover in the young the germs of future greatness, and the unsullied virtues of youth promise to yield the ample rewards of industry and talent: yet life is not unfrequently passed in anticipation, and the appropriate season of advancement never arrives. Such is the pleasing, the anxious uncertainty, with which we contemplate the prospect of life, where the means of acquiring reputation and honourable subsistence are available almost by all; but the prospect would be sadly darkened, if wealth should be the test of merit before we enter on the doubtful passage.

MEDICULUS.

June 19th, 1830.

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## MEDICAL GAZETTE.

Saturday, July 3, 1830.

"Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."—CICERO.

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### OFFICIAL ACCOUNT OF THE POST-MORTEM EXAMINATION OF HIS LATE MAJESTY.

THE body exhibited but little sign of putrefaction; and the anasarca had disappeared, excepting some slight remains of it in the thighs.

Notwithstanding the apparent emaciation of his Majesty's person, a very large quantity of fat was found between the skin and the abdominal muscles.

#### ABDOMEN.

The omentum, and all those parts in which fat is usually deposited, were excessively loaded with it. The abdomen did not contain more than an ounce of water.

The stomach and intestines were somewhat contracted; they were of a

darker colour than natural, in consequence of their containing mucus tinged with blood; and in the stomach was found a clot of pure blood, weighing about six ounces.

The liver was pale, and had an unhealthy granulated appearance.

The spleen, although larger than usual, was not otherwise diseased, and the pancreas was in a sound state.

The sigmoid flexure of the large intestine (the colon) had formed unnatural adhesions to the bladder, accompanied by a solid inflammatory deposit of the size of an orange.

Upon a careful examination of this tumor, a sac or cavity was found in its centre, which contained an urinary calculus of the size of a filbert, and this cavity communicated by means of a small aperture with the interior of the bladder at its fundus. In other respects the bladder was healthy, and the prostate gland did not appear to be enlarged. The kidneys were also free from disease.

#### THORAX.

Two pints of water were found in the cavity of the right side, and three pints and three quarters in the left side of the chest. The left lung was considerably diminished.

The lower edge of each lobe of the lungs had a remarkable fringe, which, upon examination, was found to be formed by a deposit of fat.

The substance of the lungs had undergone no change of structure, but the mucous membrane lining the air-tubes was of a dark colour, in consequence of its vessels being turgid with blood.

The pericardium (or heart-purse) contained about half an ounce of fluid, but its opposite surfaces in several parts adhered to each other, from inflammation at some remote period.

Upon the surface of the heart and pericardium there was a large quantity of fat, and the muscular substance of the heart was so tender as to be lacerated by the slightest force: it was much larger than natural. Its cavities upon the right side presented no unusual appearance, but those on the left side were much dilated, more especially the auricle.

The three semilunar valves at the beginning of the great artery (the aorta) were ossified throughout their substance, and the inner coat of that blood-vessel presented an irregular surface, and was in many parts ossified.

The original disease of his Majesty consisted in the ossification of the valves of the aorta, which must have existed for many years, and which, by impeding the passage of the current of blood flowing from the heart to the other parts of the body, occasioned effusion of water into the cavities of the chest and in other situations. This mechanical impediment to the circulation of the blood also sufficiently explains those other changes in the condition of the body which were connected with his Majesty's last illness, as well as all the symptoms under which the King had laboured.

The immediate cause of his Majesty's dissolution was the rupture of a blood-vessel in the stomach.

HENRY HALFORD.

MATTHEW JOHN TIERNEY.

ASTLEY PASTON COOPER.

B. C. BRODIE.

#### THE MEDICAL ATTENDANTS OF THE LATE KING, AND THE BULLETINS.

OUR last notice of the royal patient at Windsor had scarcely issued from the press, ere death had at once closed the sufferings and the earthly glory of one king, and added another to the list of reigning monarchs.

We leave all matters of a political nature in other and abler hands, but there are some circumstances connected with the medical history of his late Majesty's case, and with the conduct of his professional advisers, on which we think it right to touch, before we take our final leave of the subject.

On former occasions, when the King has been ill, it has been customary to give some specific and intelligible name to the disease, so that the public at large might be satisfied as to the nature of his ailment. This serves at once the useful purpose of gratifying the reasonable curiosity of his people, while the progress and termination of the case become tests by which the world can judge, at least in a great measure, how far the royal physicians, to whom so important a trust is confided, have been correct in their opinions. But, on the recent lamentable occasion, this



judicious custom was departed from; and instead of stating in popular language the nature of the malady with which his Majesty was afflicted, certain symptoms only were detailed, and it was left for the public to draw their own inferences, or rather to form their own conjectures, as to the exact condition of the sovereign. The result of this has been, that a multiplicity of contradictory statements have been in constant circulation—the public mind has been distracted—nor have there been wanting manifest symptoms of distrust, as regarded either the good faith or the skill of the physicians in attendance; nay, the very occurrence which in ordinary circumstances is regarded, of all others, as the surest proof of a physician's talent—namely, the relief afforded to his patient—has in this case been adduced as an evidence of their having mistaken the disease. We allude to observations which have been made in some of the most respectable and impartial of the daily papers, as well as by Mr. Brougham in the House of Commons. Now it becomes a very important inquiry to determine how far these censures were merited, and what the real duties of the medical attendants are in such cases, both as regards their royal patient and the public. We assume that his Majesty's physicians did fully understand his complaint, both because there is nothing in the bulletins calculated to countenance any suspicion to the contrary, and because the exact nature of the disease (namely, impediment to the circulation through the left side of the heart, which was the cause of all the symptoms) was described in the pages of this journal; and it would require an extraordinary degree of prejudice to suppose that they who saw the patient did not detect what we were enabled to infer from the mere description of the symptoms. Assuming, then, that the King's physicians were aware of the exact nature of the complaint, the question remains,

Why did they not name it? It is undoubted, that had they stated that the King laboured under organic disease of the heart, and that the symptoms of dropsical effusion and difficulty of breathing depended on this—the public would have been perfectly satisfied both that his disease was fully understood and that no undue concealment was practised. Neither, had this been done, would there have been any occasion afterwards for entering into more specific details than were actually given. Indeed we may observe that the only difference between the bulletins on this and former occasions, consists in the absence, at the commencement, of some specific and vernacular designation of the malady. We find, by a reference to various precedents, that it never has been—and certainly it never ought to be—the custom to lay before the public more than very general statements, as to the symptoms of the patient or the effects of remedies. The course which we have pointed out, then, would certainly have placed the physicians in a more favourable light as regards the public;—let us next see how it would have affected the welfare of their patient. It must be kept in mind, that the nature of the disease was not incompatible with the perfect integrity of the mental powers and undiminished acuteness of impressions from the feelings; and that, in both these respects, the King remained to the last unimpaired, is perfectly well known. We stated, in our first notice of his Majesty's case, that an individual will sometimes live for years with organic disease of the heart, and this is perfectly true; but to accomplish this end, or to afford any chance of it, the most absolute bodily quietude and mental composure are required. The action of the heart is not less under the influence of mental emotion than of corporeal exertion;—nay, it is more so; and probably, of the various causes by which morbid changes of that organ are hurried on in their development, agi-

tation of mind is the most common. When his Majesty was first attacked, it was impossible for any degree of skill to determine how long the fatal termination might be postponed by judicious management. We hesitate not to say that this was impossible, because they who suppose that medicine approaches the exact sciences in the certainty of the deductions of which it admits, place professional men in a wrong position, and expect of them inferences more precise than are consistent with the data from which they must be drawn.

Now, if it was the duty of the physicians to disregard any temporary impression which might be made on the public mind unfavourable to themselves, and to adopt every means of medical and moral management calculated to delay the progress of the disease, and to protract the life of their august patient, then did it become indispensable to conceal from his Majesty whatever was calculated to agitate him. In ordinary cases of a similar nature, and more especially where the individual is of a nervous temperament, it is regarded as particularly desirable to prevent him from taking a gloomy view of his own situation; and, generally speaking, to tell a man that he has an organic disease of the heart, is tantamount to aggravating all his symptoms, and removing the only chance of postponing the fatal result, and securing comparative comfort in the interval. No candid man, whose opinion is worth any thing, can deny, that to have announced in the bulletins that the King laboured under organic disease of the heart, knowing that his Majesty insisted on reading these documents, would have been the height of cruelty, considered in a moral point of view, and an act of extraordinary rashness and want of skill, considered professionally. But if this would have been improper under ordinary circumstances, it became doubly so in the case of his Majesty; both because—as we have learnt from good authority—he had made me-

dicine his study to an extent which would have enabled him fully to understand the fatal meaning of such an announcement, and because the peculiar constitution of his mind rendered him painfully alive to all agitating emotions. It is said to have been on this account, and in fulfilment of the same indication, that he was dissuaded from seeing his royal brother, the Duke of Sussex, lest the agitation had overpowered him, and produced alarming, or even fatal results. Whether there was or was not an unnecessary degree of mystery in other departments of the royal household, is a point with which we have nothing to do, nor could political discussions be aptly blended with the details of science; but as regards his Majesty's medical attendants, we must say that they were placed in a situation of no common difficulty with regard to the kind and degree of information which they were called upon to communicate; and we doubt not that the public, now that they have an opportunity of appreciating their motives, and viewing the whole transaction collectively, will agree with us in thinking that the first duty of the physicians here, as in the practice of private life, was to study the welfare of their patient.

There is another, and more limited view of their conduct, as regards their own profession, to which we also think it right to advert. It has been asked—and very generally too, though they may be the last to hear it—why Sir Henry Hallford and Sir M. Tierney took the whole burden upon themselves? Mr. Brodie seems to have limited himself exclusively to his business as a surgeon, taking none of the medical responsibility of the case—an inference clearly deducible from the bulletins being issued without his signature; and, as the circumstance of sending for Mr. Nussey to sit up with the King proved that farther assistance was required—why, it has been asked, were not one or more of the many eminent physicians,

of whom the metropolis at present boasts, summoned to their aid? The ready answer to this is—the express declaration of the royal will. His late Majesty was always remarkable for the retiring nature of his disposition, which, added to the indolent habits of the later period of his life, had grown into something like an aversion to strangers: besides this, he was particular, almost to fastidiousness, about the manners of those who surrounded his person. He who forgot for a moment that his patient was a King, or presumed to carry the familiarity of private life within the precincts of the palace, was sure to lose the royal favour. And when it is considered how much alike all men are on the bed of sickness—how many questions and examinations princes must submit to from their medical attendants, which none others would presume even to hint at—when, we say, it is considered how much these things tend to level the distinctions of rank, it must be obvious in how difficult a situation the medical attendants of his late Majesty must often have been placed; and we believe that we are correct in stating that it is in the prejudice created by some departure from strict etiquette—some little *gaucherie*, perhaps even unsuspected by the individual himself—that is to be found the real cause of the absence from Windsor, on the recent occasion, of some of those who had formerly attended his Majesty. That Sir Henry Hallford feared the influence of any professional rival near the throne, is an idea which, we believe, to be altogether unfounded;—perhaps no man ever possessed more entirely the confidence of his royal patient, or combined in a more remarkable degree the accomplishments of a skilful physician with the refined manners of the courtier\*.

\* We observe that the distinguished Baronet was the first to kiss the hand of the new sovereign, and that on Sunday last he had the honour of dining with the King and Queen at Bushy, on which occasion no other guest was present except the members of the royal family. This striking mark of favour, at such a time, we believe was in-

But while we profess our conviction that the absence of other physicians on this occasion depended entirely on the disinclination of the King to admit any one into his sick chamber who was not personally known to him, and while we acknowledge the difficulty under which the medical attendants laboured as to the nature of the bulletins, still must we lament the consequence, as having given rise to surmises injurious to the honour of our calling, and as tending to favour the effort, so strenuously made by designing persons, to break down those distinctions which have hitherto rendered medicine, like the law, a profession composed of different departments, and which, by limiting the field of each individual, has led to greater perfection in the knowledge of his own branch of the art, and thus increased the usefulness, while it tended to support the rank and dignity, of the whole as a profession. But for the circumstance we have alluded to, the physicians to the King would not have been open to the absurd charge of having been compelled to resort to the prescriptions of Sir Astley Cooper, while by intrigue they excluded him from the presence, or of having learned of Mr. Nussey the propriety of giving diuretics in dropsy, or expectorants to relieve a cough. It is in keeping with the nature of these ridiculous allegations that they should have emanated from one who, in proof of the superiority of his medical knowledge, adduced it as his opinion that his Majesty was labouring under gout, at the very time that we pronounced the malady to be—what the post-mortem examination has since proved to be correct. “It is thought *by the best informed*, (says this writer) that the puriform secretion is the result of an arthritic inflammation of the mucous membrane of the lungs—a spontaneous effort of nature to relieve the system *from some more serious effect of a gouty*

tended, and certainly was well calculated, to shew the estimation in which his services are held by the august relatives of his deceased master.



*disposition!!!*" What more serious effect than a discharge of pus from the lungs was to be apprehended—or how nature made such a mistake as to attempt to "relieve the system" by "a spontaneous effort," which proved fatal within a few hours after this opinion was indited—we must leave for the writer himself to explain. In the same way we could, without difficulty, laugh to scorn all the "astounding" denunciations against the medical attendants which have appeared in the same paper, but it would be giving to them an importance of which they are utterly unworthy.

We have used our humble efforts to support his Majesty's medical attendants on this occasion, because we thought it our duty to defend them from scurrilous and undeserved attacks; and for ourselves, we have throughout this discussion been actuated by no other motive than that of conveying to the public correct information, and rendering to all those employed about the royal person what we believed to be strictly their due.

In taking leave of the subject there is only one other point to which we would allude: the minuteness of some of our details respecting his Majesty's illness, and the complete confirmation which our view of his case has received from the post-mortem examination, has led some to suppose—and even confidently to assert—that the statements which appeared in the Gazette were furnished by the medical attendants. We cannot, however, accept of this compliment to our accuracy at the expense of our impartiality and independence, particularly as it leaves these gentlemen under the unjust imputation of having published anonymous articles in commendation of themselves. We beg most unequivocally to state, that no part of our information, or of the opinions which have been expressed in this journal, were communicated to us, either directly or indirectly, by any of his late

Majesty's professional attendants,—except, however, our contradiction of the assertion that Sir M. Tierney had signed the bulletins without seeing the King;—an allegation which, however improbable, we would not have denied so positively, without having ascertained its falsehood in the most direct and satisfactory manner.

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#### LONDON UNIVERSITY.

A MEETING is to be held this day, (Saturday, July 3), at which the subject of the disputes between the Professors and the Council of the London University is to be taken into consideration by the proprietors at large. By far the most important part of the business, as regards the medical school, relates to the Professor of Anatomy. While these unfortunate dissensions were confined within the walls of the University, we refrained from entering into any details; but as we now find, on the authority of the Warden, that the statements and counter-statements are not limited in their circulation to the parties to whom they are addressed, we hold ourselves justified in making our readers acquainted with the particulars of these extraordinary transactions.

The University had not long commenced its operations before considerable dissatisfaction was expressed by several of the Professors, as regarded either the office of Warden, or the manner in which Mr. Horner conducted the duties assigned to him; and after various attempts to produce the redress of grievances, real or supposed, by less decided measures, they proceeded to request an interview with the Council. This document was signed by nine Professors, three of whom, viz. Dr. Conolly, Dr. Davis, and Mr. Pattison, were of the medical staff; and they stated that "they were prepared to explain the causes of the evils which exist in the London University, and to assign the remedies for those evils."

The request was acceded to, and the interview took place on the 20th of May, when it was determined that the statements of the several Professors should be reduced to writing, and a conference held on a subsequent day.

The first statement was that of Mr. Pattison, who represented himself as having suffered a succession of "anoyance, vexations, and persecutions," from the period of his first appointment; next, that Mr. Horner had been "a party in the attempt to drive him from the University;" and, lastly, "that these proceedings were ruinous both as regarded his reputation and the interests of the establishment."

Among the grievances complained of, the first mentioned by Professor Pattison is the appointment of Mr. Bennett to the office of Demonstrator. This officer, he was "invariably assured," he would be allowed to appoint himself, as is customary in private anatomical schools; and he had fixed upon a gentleman who dissected for him in the United States to fill the situation, when he was advised by Mr. Horner not to enter into any engagements, "as the Council might make the appointment themselves." Mr. Bennett, according to Mr. Pattison, is a "second Professor of Anatomy," and holds that his having received such an office could not have arisen from any suspicion existing *at that time* of his (Mr. Pattison's) incompetency. To this Mr. Horner answers, that the gentleman alluded to by Mr. Pattison was his own nephew, and that he advised him not to be too hasty in the matter, as the Council intended to make all the appointments themselves.

During the first session, anonymous complaints were at different times addressed to the Council, complaining of Professor Pattison's mode of conducting the business of his class; but he informs us that they were investigated, and found to be "groundless." However, at the first distribution of prizes, Mr. Pattison took occasion to read a passage from

one of the papers of the gentleman who obtained the gold medal, and to commend in high terms the excellence of the answer. Now unfortunately it so happened, that the anatomical information displayed by the pupil was not so apparent to others as to the Professor; and, in fact, while Mr. Pattison represented the answer as pre-eminently good, Mr. Bennett regarded it as egregiously incorrect, and, either voluntarily or involuntarily, suffered some expressions of astonishment to escape him. Which of these gentlemen was anatomically right, we shall not pretend to decide; but we must say, while it was singularly ill-judged on the part of Mr. Pattison to award the highest medal, and to direct attention, to an answer concerning which any doubt could possibly be raised,—so was a public meeting of this nature a most ill-chosen occasion for Mr. Bennett to display the real or supposed superiority of his own anatomical knowledge. This anecdote was bruited about, and certainly did not tend to advance the interests of the University. After some time, Professor Pattison having heard of the notice it was attracting, "came to an immediate rupture with Mr. Bennett," and addressed a letter to the Council on the subject: of this letter no notice was taken, and a doubt is expressed whether it was ever laid before them, as Dr. Birkbeck never saw it. This is met on the part of Mr. Horner by a reference to the minute-book of the Council, by which it appears that the letter was read at a "full session," Dr. Birkbeck, among others, being present.

Soon after this period, Mr. Bell and Mr. Horner being both in Scotland, the latter called on the former, and proposed that he should take the anatomical chair; after which he wrote to the Council, recommending the consummation of this measure. The proposal was not entertained by the Council, but Mr. Pattison does not hold his interference less indicative of the feelings

towards him by which the Warden was actuated. We have stated that Mr. Bell was in Scotland at this time, and the view which he took of the matter will best appear from the following letter, addressed to his colleague:—

My dear Pattison,—I learn with great concern that you have addressed the Council. I could have wished that you had first tried what your colleagues could have done to arrange matters to your satisfaction.

We have one interest; and we must rise in public estimation or fall together; ridicule will attach to each individually, if we break up or fail. We must all sacrifice something; and I could myself draw a picture of my condition in the university, contrasted with what I have been, which would make any body wonder why I should belong to it. But I confess to you, that the honour of being one of those who first formed the medical school is my chief inducement. I beg of you to think twice before you forego this distinction.

You have given Bennett too great an advantage, by complaining of him: had you expressed yourself to your colleagues, we might have arranged betwixt you; and even now I entreat you to consider dispassionately what you would wish to be done, and let us set about reconciling matters, and submit a plan to the Council, proceeding from the medical professors.

*If there be any thing which I can do by shifting my position, consistent with the desires of our brethren, I shall be happy to do it.*

Would it be satisfactory to you that the receipts of all three,—Bennett's, yours, and mine,—constituted one fund? I am exceedingly desirous, and you will, I am sure, find all the Professors willing, to have your rights supported. Do not, however, mistake your position. In the old schools of London, the teacher of anatomy was the proprietor of the school, and called to his support whom he wished, and of course he had a power over them. We stand independent. The university is not our property. There is not one of us but might be dismissed, and his place filled up immediately, without loss to the institution. There is its strength and permanency; for, hitherto, such divisions as we now exhibit have destroyed the private schools. The constitution of the London University will withstand these discontents; and we, the present Professors, will alone suffer. Consider, my dear sir, how you will be blamed if such misfortune should be traceable to you. Put your view before one or two of the Professors whom you consider your most sincere friends, and abide by their decision.

I hope by such means you will be prevailed on to withdraw your letter to the Council.

I fear their patience will be exhausted with us at last.

Believe me ever, truly yours,  
CHARLES BELL.

P.S.—I shall be up in a few days.

To this Mr. Pattison replied—

8, Old Burlington Street  
August 30, 1829.

My dear Bell,—Your letter without date\* I only received yesterday: I can with truth say, that I am ever disposed to receive the advice of my friends in the very best spirit: I may differ from them, it is true, but, for the kindness which has dictated these interferences, they shall ever receive my sincere thanks. Do, pray, therefore, accept of mine for the trouble you have taken to promote my interests. Having said thus much, allow me to say that I am at a loss to comprehend how these could by possibility be promoted by adopting the suggestions contained in your letter. Mr. Bennett has used me very unhandsomely: he occupies a situation, the emoluments of which, at all events, are greatly inferior to mine, and your advice is, that I should have my *satisfaction* by giving up to him one half my income!!! I shall suppose a case: a gentleman of fortune has a steward, who has a very liberal salary, paid for the purpose of inducing him to promote the interests of his employer; but he, instead of doing so, does every thing in his power to injure them. Now, I will ask you, my good friend, what you would say of this gentleman was he to punish his steward by dividing his income with him? I have no doubt you will answer, "If he did so, he must be a *great fool*;" and as I should be very sorry that a person whose good opinion I estimate so highly should form such an opinion of me, you will not, I am sure, be astonished at my declining to adopt your suggestion.

I was not a little astonished at what I must call the impudence of Mr. Bennett in recommending to Mr. Horner, as the best mode of arranging the difficulties which have arisen from his own misconduct, that I should exchange the chair of anatomy which I occupy, with you for the one of surgery, or of the Warden having taken trouble in endeavouring to induce you to go into this arrangement, *without first ascertaining* whether such an exchange would be agreeable to me. Once for all, I beg leave to say, that I feel fully equal to fulfil the duties of the office to which the Council have done me the honour to appoint me, and that I shall continue most zealously, and to the best of my ability, to discharge them; and that no offer, neither pecuniary nor of any nature whatever, will ever induce me to exchange the professorship of anatomy which I occupy for any other which may be offered me. This decided and

\* The letter bears the Edinburgh post-mark of August 24, 1829.



distinct expression of my sentiments I consider it necessary to make, as it may have the effect of teaching Mr. Bennett that it is quite useless for him to waste his suggestions,—of relieving Mr. Horner from anxiety and trouble, which in the present state of his health must be exceedingly injurious to him, in the endeavour to realise them,—and of not imposing on you (I use the language of the Warden) the necessity of performing “*an act of disinterested liberality.*”

If by “*shifting your position,*” you mean to give up one of the two chairs which you at present occupy, for the purpose of placing Mr. Bennett in the situation of a Professor, all I can say is, “*c’est votre affaire;*” and as I never interfere with other persons’ business, I have no observations whatever to offer on the subject. \* \* \*

Believe me, dear Bell,

Yours most sincerely,

GRANVILLE S. PATTISON.

It is also stated by Mr. Pattison, that while Mr. Horner addressed the Council from Edinburgh, recommending them to appoint Mr. Bell to the chair of anatomy, he did not consult him (Mr. Pattison) on the subject, although he wrote to him at the same time.

In answer to these very heavy charges Mr. Horner states, that having been in bad health, the Council allowed him to leave London, in consequence of which he remained in Edinburgh from June 5, till the end of September 1829; and that having come back to London, he was again recalled to Edinburgh in a few days, by the death of his father. Towards the end of August, when in Scotland, he received a letter from Mr. Pattison, complaining bitterly of Mr. Bennett: on the receipt of this he immediately wrote an answer, recommending conciliatory measures; but scarcely was this dispatched when he received a letter from Mr. Bennett, complaining not less severely of Mr. Pattison, and suggesting the propriety of Mr. Bell taking the anatomy, and giving up the surgery to Mr. Pattison. In consequence of this letter, Mr. Horner wrote to the Clerk of the Council, directing him to see the leading members, and take their instructions; he at the same

time inclosed a letter from Mr. Bell to the Council, and suggested that it should be shewn to Messrs. Pattison and Bennett. Mr. Bell’s letter is not given, but the Warden compliments him highly “on his disinterested conduct, and his anxiety to aid the Council.”

The measure alluded to not having been adopted, the second session commenced under the same arrangements as the preceding; but new charges against Mr. Pattison were soon adduced—they were made by persons who gave their names, on the condition of their being kept secret, and the accusations assumed the distinct form of “neglecting the business of the class, by lecturing in a desultory manner and irregularly, and by failing to supply subjects sufficient for the purpose of effective teaching.” A Committee, consisting of Messrs. Brougham, Denman, Mills, Warburton, and others, was appointed to investigate the truth or falsehood of these allegations; and we are told by Mr. Pattison that he proved that they were without foundation, so that Mr. Brougham and Mr. Denman, whom he “happened accidentally to meet,” expressed themselves as fully satisfied; but no notice of a corresponding nature was taken of the matter by the Council. An investigation was now entered into, at the request of Mr. Pattison, by Dr. Conolly, Dr. A. T. Thomson, Mr. Turner, and Dr. Davis, who declared their perfect conviction of the zeal and talents of their colleague, as well as of the frivolous and groundless nature of the charge. They do not, however, stop here, but add, that this inquiry “has furnished strong matter of suspicion that the charges have originated in feelings which are too personal in their nature to deserve the countenance of the Council.”

It was next complained of Mr. Pattison, that his attendance at the Dispensary had been irregular; and he pro-

tests against the manner in which the inquiry was gone into. The Apothecary was sent for and privately examined, and severe animadversions made on the Professor's conduct, and addressed to the medical faculty, without his being allowed an opportunity of explanation. The reason which he assigns for his acknowledged irregularity is the "trifling nature of the surgical cases," while he was always ready to go if required; and that "whenever cases of interest did occur, no man could be more zealous in his professional attendance." Mr. Horner, on the other hand, informs us, that the Dispensary accounts having come under the revision of the Finance Committee, one of the members said he had been informed that Mr. Pattison had been very irregular in his attendance—another member made the same remark—and then an appeal was made to the Warden, who stated that he had heard similar reports, but did not know whether they were well or ill-founded. The Committee then sent for the Secretary to the Dispensary, and examined him; and instructed their Chairman to make a special report respecting the Dispensary to the next session of Council.

Mr. Pattison sums up his long list of grievances by alluding to the charges brought against him by Mr. Eisdell, a pupil; and stating his belief, that "if Horner did not instigate him to make them, he encouraged the complainant in making and in persevering in them." The circumstances on which he grounds this opinion are—first, his having seen Mr. Eisdell go into Mr. Horner's private room, and remain there for some time; and, secondly, the answers given to Mr. Eisdell's letters—namely, on the first occasion, that his charges against Mr. Pattison could not be entertained, because they were not specific; and on the second occasion, because they were not supported by other students. To these Mr. Pattison adds, in confirmation

of his suspicion, "a knowledge of Mr. Horner's hostility towards him." As an illustration of this, the Professor details what he regards as a personal insult which was offered to him on the occasion of the annual meeting: his brother being in town, was desirous of being present, and Mr. Pattison, not anticipating any objection, accompanied him; they were, however, stopt by the door-keeper, on which Mr. Pattison sent his compliments to Mr. Horner, and begged that he would give an order for their admission. To this the answer brought by the servant was—"Tell Mr. Pattison that his brother cannot be admitted." Mr. Horner answers, that the interview which he had with Mr. Eisdell related to some irregularity with regard to that gentleman's motto, as connected with his competition for honours; and that he avoided all intercourse with him on the subject of the charges against Mr. Pattison, except in writing; and on this point it appears, by a specific resolution, that the Council are satisfied that Mr. Horner is blameless.

With the following extract we conclude our account of Professor Pattison's case:—

I come, in conclusion, to the consideration of the injurious effects which must have been produced not only on my reputation as a teacher of anatomy, but on the prosperity of the Medical School of the University, from the system of calumny against me which has been created and fostered since my first connexion with the institution. I employ the term "fostered," and I do so after the most mature deliberation. Every candid and honest man who reads the statement I have now addressed to the Council, will allow that, from the facts of it, I am perfectly justified in making this serious charge. I state distinctly, that I suspect Mr. Horner has encouraged the system of persecution which has been in operation against me. That by misrepresenting the sentiments of my colleagues and of the pupils—by suspicious whisperings to members of Council as to my acquirements as an anatomist—by taking care that every anonymous complaint which either he or others may have got up for the purpose of injuring me should be most fully published—and by being equally careful that the refutation of them should be brought be-

fore the Council when few of its members were present,—I say, I suspect that by such conduct he has concealed from the majority of the Council the facts contained in the statement I now address to them, and with which, had Mr. Horner acted correctly, they ought long before this time to have been made acquainted. But should I in these suspicions be in error—should Mr. Horner have honestly performed his duty as *Warden and Secretary*—should he have fairly, and without bias or misrepresentation, laid all the facts of my case, as they occurred, before the members of the Council,—I then most unhesitatingly charge the Council themselves of having been guilty of a most unheard-of act of injustice. And, elevated as the members of the Council may be by their rank and their talent, I would tell them, that after a reputation—and I may be permitted to add, a high one—as an instructor, has been obtained by eighteen years' most successful teaching; after the gentleman who has gained it has been induced to give up a situation of 2000*l.* per annum to engage in the service of the University over which they preside; it is no trifling injustice to encourage a system of slander against which no reputation could stand, and to set aside the baneful influence of which no talent nor exertion could succeed. But I will not permit myself for a moment to believe these persecutions can have been encouraged by the Council. Independently of the respect I entertain for the character for honour and justice of its members, it is impossible to believe they would have given countenance to slanders as ruinous to the prosperity of the Medical School of the University as to my own reputation.

The statements of Mr. Pattison, generally, are confirmed by eight of his colleagues, who conclude their address in the following words:—

We hold it to be indispensable that the Professors should transact all business directly with the Council; and it should be a fundamental law, that no regulation be made with respect to any class, no inquiries entered into with respect to the conduct of Professors, or any thing of any sort done that may compromise the interests of any Professor, either by a Committee or the Council, without such Professor being present, whenever such regulation, inquiry, or proceeding is made, entered into, or completed.

(Signed)

J. Conolly; David D. Davis; Augustus de Morgan; Anthony A. Galiano; Dion. Lardner; G. Long; J. R. McCulloch; L. Von Muhlenfels; Granville S. Pattison.

In opposition to which, however, we find from Mr. Horner's letter, that—

On the 5th instant, the following Professors, viz. the Rev. Thomas Dale, Mr. Lindley, Mr. Panizzi, Dr. Thomson, Dr. Turner, and Mr. Charles Bell, addressed a letter of remonstrance to the Council against the proceedings of their colleagues, a copy of which they have communicated to me. Dr. Watson at the same time addressed a letter to the Council, stating his confidence in me, and his satisfaction in all the official intercourse he has had with me. In the letter of the above six Professors, a very decided opinion is expressed relative to the charges brought against me: it is not necessary for me to do more than to quote the following sentences:—"The few *facts* which have been adduced as accusations against Mr. Horner, have been fully and triumphantly answered by him."—"The charges, now that they are shewn by documents to be entirely groundless, recoil upon his accusers."

At a Session of Council, on the 8th inst. the "Statements" of the nine Professors, my answer to those statements, and a pamphlet, entitled "Observations on a Letter addressed by Leonard Horner, Esq. to the Council of the University," and signed by Professors Pattison, Lardner, De Morgan, Conolly, Long, and McCulloch, were taken into consideration; whereupon the following resolutions were passed, and a copy of them was this day transmitted to me by the chairman, Henry Hallam, Esq.

"1st, That Leonard Horner, Esq. Warden of the University, has performed the duties of his office with great diligence and fidelity, and that the Council repose entire confidence in his honour and capacity.

"2d, That the matters alledged against the Warden in the statements of the nine Professors are either such as the Council know to be unfounded, or by no means of a nature to warrant the inferences deduced from them; while, at the same time, the Council cannot but disapprove of the publication, by the Warden, of a letter which appeared in the *Sun* newspaper of the 22d day of April last, under the signature of 'A Proprietor.'"

Such, we believe, is an impartial narrative of the question as it at present rests; and it will afford matter for grave, and, we trust, dispassionate consideration. Although Mr. Pattison here appears as the accuser of Mr. Horner, it would be affectation to conceal that the Professor himself is directly charged with incompetency by his pupils, seventeen of whom signed the remonstrance addressed to the Council. This charge has been entertained; and we are told that



some method of putting Mr. Pattison's knowledge to the test has actually been under discussion. If Professor Pattison be not incompetent, it is impossible to conceive an act of more frightful injustice than to deprive him of his chair on such a plea, or even to have made any attempt to do so; and if by *competent judges* he be declared incompetent, then, in the name of all that is wonderful, what are we to say of his testimonials? These now lie before us: they bear the signatures of thirty-five individuals, comprising the names of many of the most eminent physicians and surgeons in this country and America, as well as of several distinguished literary men: they are of the strongest description that it is possible to conceive, and attribute to Mr. Pattison those very qualities in which we are now told he is deficient: some of them, also, compliment him on his extraordinary success as a teacher, and his felicitous mode of imparting information to others. Mr. Pattison may be a careless or a refractory person, but that he is incompetent as an anatomist, we cannot believe: if it were so, what a satire it would form on the system of estimating men by their credentials!

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#### ROYAL INSTITUTION,

Friday, June 11.

B. B. CABELL, ESQ. VICE-PRESIDENT, IN  
THE CHAIR.

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“*On the Laws of Co-existing Vibrations in Strings and Rods.* By Mr. FARADAY, for Mr. WHEATSTONE.”

AN investigation of the philosophy of sound has for several years past occupied the attention of Mr. Wheatstone, and various stages of this interesting inquiry have, at different times, been submitted to the attention of the members of the Royal Institution, at their evening meetings, by Mr. Faraday. The subject now proposed for more especial

illustration was the mode by which the excursions of strings and rods might be rendered sensible to the eye; and this appears to be satisfactorily done by a very ingenious instrument invented by Mr. M. and called the “Kaleidophone.” Strings, extended and fixed at both ends, will, when put in motion, vibrate isochronously, if they produce musical sounds, and the notes, as in the case of the guitar, may be changed by lengthening or shortening the vibrating string or rod, by means of pressure on the frets. But strings, even when not thus varied in their length, by art, will, nay do, as is the case in the Æolian harp, often vary the lengths of the vibrating cord spontaneously. Sometimes the whole string vibrates simultaneously; sometimes it vibrates in two parts, there being a point of rest either in the middle or on some aliquot part of its length; or it may vibrate in three, four, or five equal parts; and all these various cases occur in the instrument before mentioned.

Furthermore, two, three, or more distinct vibrations, may exist in the same string at the same time, and the excursions which the vibrating rods or strings then make are very curious; but the rapidity with which they are performed prevents them under ordinary circumstances from being distinguished; and the kaleidophone has been invented to render their path through the air sensible to the eye.

That celebrated philosopher and physician, the lamented Dr. Young, observed that the bright spot whence the light becomes reflected from a silver string of a guitar, or other instrument, rendered its excursion visible; and upon a similar principle rests the construction of the kaleidophone. But it must be recollected that optical experiments have shewn, that an impression made upon the retina by an object, say a luminous point, is for a short time permanent; so that if a burning coal be whirled round quickly, a circle of fire will be perceived, *i. e.* if the impression made by a single object on one point of the retina be renewed on that same point before the previous impression be extinct, a series of these will be contemporaneously visible, and one object be seen in every point of the path it traces through space, whether it move in a circle or any other more complex figure. Thus also is it if any object be

looked at through a slight crack in an opaque wheel, or through several succeeding fissures, as in palings before buildings, &c. only a small part of the objects on the further side will be visible at once; but if the wheel be made to revolve rapidly, or the observer be carried along swiftly, as on a stage, then the succeeding impressions of each successive part being made before the preceding impressions have been obliterated, the whole of the prospect becomes visible.

Such being the physiological facts, as regards the organ of vision, the vibrations which take place in the springs and rods being almost inconceivably rapid, it follows that the whole of the paths traced by a vibrating string or rod will be visible at once to the observer; and as these paths are very curious they form figures as beautiful as those exhibited by the kaleidoscope; some of which have been drawn and published by Mr. W. The instrument is exceedingly simple in its construction, consisting essentially only of elastic rods or strings, to which some bright and highly-polished or otherwise notable object is affixed; and then, producing a certain note by moving the bow of a violin across it, the excursions proper to that note become immediately perceptible.

Mr. Faraday observed, that probably this principle of noting exceedingly rapid motions might be advantageously applied to solve some interesting problems in natural philosophy—such as the course of electric currents; whether there be two kinds of electricity, &c. &c.

In the Library we noticed Captain Kater's newly-invented portable equatorial instrument; a very ancient astrolosse, called the mirror of Alexander; and an exceedingly well-preserved specimen of a Hippopotamus's head.

This being the last meeting of the session, the Society adjourned until January 1831, when we hope again to have an opportunity of reporting their proceedings. The subjects introduced are generally of much interest, and illustrated in the most agreeable and satisfactory manner; thus tending, in an eminent degree, to farther the interests of science.

## HOSPITAL REPORTS.

### ST. THOMAS'S HOSPITAL.

#### *Amaurosis from Internal Inflammation.*

MICHAEL CONNOR, aged 49, admitted into George's little ward on the 22d of April, under the care of Mr. Tyrrell. He says that about two years ago, he received a fall, and alighting on his heels, fractured the left leg: he was taken to the London Hospital, where he remained upwards of thirteen weeks, and whilst there was attended by Mr. Andrews. At the time he was discharged from the hospital, his sight had become rather dim, and it continued gradually to get worse for six months after, during which time he was going about his usual employment, being that of a labourer in St. Katharine's Docks: he did not apply for any relief until the end of this time, when he was attacked with giddiness and severe pain in the back part and sides of the head, but more especially on the right side, where darting and shooting pains extended from the external canthus of the eye back to the occiput. He again sought relief at the London Hospital, and was admitted under the care of Dr. Frampton: he was cupped between the shoulders, blistered on the nape of the neck, and took mercury so as to affect the mouth: by these means the pain left him entirely, but the loss of sight continued to increase, and at the end of three months he was discharged. Nothing further was done for him for some time, and finding his sight still continuing to grow worse, he applied to Mr. Ware, in New Bridge-Street, who prescribed blisters to the temples and behind the ears, with pills every night. Whilst under this treatment, his mouth was not made sore, neither did he experience any relief; but on the contrary, after remaining for upwards of twelve weeks, he was obliged to be led to the house by an assistant, the sight having continued to decline. He likewise states, that after an elapse of time, he applied to the Eye Infirmary in Moorfields, where he became an out-patient of Mr. Tyrrell, but having been totally blind, as regards the discerning of objects, for the last four months, he was not able to procure assistance to attend regularly—consequently he has been admitted into this hospital.

The present character of the organs are, first, an unnatural prominence; a turbid appearance on looking through the pupils, which are preternaturally contracted, and fixed by adhesion to the anterior capsule of the lens; the irides have tortuous amber-coloured lines diverging from the pupils, around which it is more dense; he can just discern the light or shadow of an object passing before him; does not complain of any pain.

Ordered two grains of calomel and half a grain of opium, night and morning.—House-physic occasionally.—Extract of belladonna to the lids.

May 4th.—His mouth begins to feel sore from the mercury, which he says he first perceived yesterday. No alteration is produced yet as regards the sight; the pupils are now fully dilated and regular, which affords a better view of the state of the parts behind: a diffused and turbid appearance is presented, having in the centre a more dense character, and somewhat inclined to a greenish tint. There are slight flocculi of adhesive matter hanging on the posterior part of the right side of the margin of the right pupil.

12th.—Ptyalism is now produced to the extent that the saliva has for the last three days ran from his mouth in streams. Says he can discern dark objects the width of the ward, and points to the black plates upon the wall opposite, on which are written the numbers of the beds; can also see the patients walking about the ward at some distance; the opacity has considerably disappeared.

Ordered a gargle, composed of one part of the solution of chloride of soda to six of water. The pills to be continued.

26th.—His sight is improved, and he is able to walk about the ward without assistance, and can count the panes in the windows. Ptyalism suppressed, but the mouth is still very sore; there is much less of the turbidity; pills every other night.

June 2d.—He says he is gradually recovering more sight; mouth still sore. Mr. Tyrrell observed to the pupils that in cases of this description it is necessary to keep up slight mercurial action for some time; the belladonna is kept applied as usual. The patient having been almost in total darkness at the time of his admission, and having now so far recovered his sight, we have thought proper to decline taking any farther notes of the case.

#### *Artificial Pupil.*

There is a patient in the same ward on whom Mr. Tyrrell operated for artificial pupil, April the 16th. This is a case where the left iris became prolapsed after extraction of cataract by the upper section, which took place some months since. The method of performing the operation consisted, after simply making a section through the cornea, in making a transverse incision into the centre of the iris by means of Maunoir's scissors, the patient being placed for the purpose in a recumbent position, with his head resting upon a pillow. A very good pupil in this way has been formed, quite transparent, and the sight perfectly restored, with the exception, he says, of having a slight web-like appearance floating before the eye at a little

distance. He is quite blind in the right organ, having been operated on this side twice for solution, by Mr. Lawrence, about ten years ago, a fortnight elapsing between each. He could see very well for four years after, but being then attacked with severe inflammation in both eyes, the sight was entirely lost.

### GUY'S HOSPITAL.

#### *Popliteal Aneurism.*

HENRY ROMBOLD, æt. 42, by trade a carpenter, admitted into Luke's Ward on the 14th of April, under the care of Mr. Key. He states, that about eight days ago, whilst employed at his business, he was suddenly seized with a spasmodic flexion of the right leg, which he attributed to cramp, and immediately, by a sudden effort, thrust it into the extended position. In a short time after, he perceived a swelling in the ham, which, as it increased in size, was followed by a numbness in the calf of the leg and foot. On examining the popliteal space, there is a circumscribed tumor, about the size of a hen's egg, having a diffused throbbing, which is synchronous with the pulse at the wrist; and on making pressure upon the femoral artery in the groin, it almost entirely disappears. As the vibration of the heart's action through the stethoscope indicates a healthy state of that organ, and there being very good resonance over the chest, on percussion, he is considered a favourable subject to undergo an operation for his complaint, which accordingly was performed for tying the femoral artery on the Tuesday following, April the 20th. This was conducted in a manner similar to that which was detailed in No. 114, p. 606, of the Gazette. On the following day he complained of pain and numbness in the ankles and heel of the foot of that side, and from which he finds considerable relief by one of the patient's rubbing the parts with his hands. In the morning there was a great deal of pain in the knee, but this soon after left him again. Since the operation he has had sickness at the stomach, but no vomiting. He was ordered a draught composed of fifteen grains of carbonate of ammonia, fifteen grains of citric acid, with syrup of orange peel and water, to be drank in the state of effervescence. Up to this time (1 P.M.) he has taken three doses, and the sickness has entirely left him. A little thickening remains in the site of the tumor, probably consisting of coagulated blood. There is no pain or tenderness on pressure. Has not had any sleep during the night, and he says when he attempts to close his eyes he feels a giddiness in the head. Tongue rather white, moist, but not coated; skin hot; does not complain of thirst; pulse a little quicker than natural.



22d.—Has pain only in the heel; pulse about natural; no sickness at the stomach; has had a good night; limb warm; tongue white; bowels have acted once from castor oil. On the 24th the report was still favourable; he stated that the only uneasiness which he felt was occasionally slight cramp in the heel.

June 2d.—The ligature remained until the twenty-ninth day after the operation, when it was withdrawn. The wound at this time was healed, except at the part where the ligature protruded. A poultice has been kept applied to the sore from the time of its removal up to the present date, when it was now omitted. The wound being quite healed, a strip of soap plaister was merely placed over. But very slight traces remain of the tumor in the ham, and the patient will be dismissed from the hospital in a few days.

### ROYAL WESTMINSTER OPHTHALMIC HOSPITAL.

#### *Cases of Amaurosis treated by Strychnine.*

[Concluded from page 480.]

CASE III.—James Spooner, æt. 42.

Feb. 9th, 1830.—This patient is of delicate frame, a painter and glazier: he perceived his left eye to be gradually growing dim about sixteen months ago, and found that it continued so till four months back, when it became rapidly worse, so much so that in a short time he became perfectly blind with it.

About six months back the right eye also became similarly diseased; indeed very shortly after he first perceived his left affected, he felt an alteration, but the progress of this was more gradual, and he was able to go on with his work until within six months of the present period. Since this his blindness has increased to such a degree as to leave him now in almost total darkness. He finds he can distinguish objects best in a quiet light.

He has at times been subject to a pain in the head, but has never suffered from any fits or paralytic attack; mode of living regular; the pupils are considerably dilated; cornea convex; pupils very considerably dilated, and stationary; tunics of the eye healthy.

Empl. Cantharides temp.

11th.—Unguent ut supra.

15th.—No change; bowels kept open.

R Pulv. Strychnin. gr.  $\frac{1}{4}$ .

22d.—Powder is sprinkled every other morning on the right temple, where a depression has been made on the blistering surface by means of a pea.

March 1st.—Occasionally suffers from pain in his head, but the eye-sight is no better. Pt.

8th.—The same.

10th.—R Strychninæ gr.  $\frac{1}{8}$  bis die.

17th.—The same.

26th.—No alteration or improvement. Ordered to omit.

CASE IV.—Feb. 7.—William Jenkins, æt. 43. Strong plethoric habit; above the common stature; entirely blind with his right eye, and nearly so with his left; by business a porter, accustomed to hard work, and in the habit of drinking freely, but has never suffered from any thing but the piles, which have not troubled him during the last two years. He attributes his blindness to exposure to a very strong current of air whilst heated, for shortly after this, which was two years since, he found his right eye dim; every thing appeared confused when he looked with it, and he could distinguish objects only on the right side. In a few days he squinted with it; suffered from constant flittings of black bodies before his sight, and could distinguish nothing in front of him. He never suffered from any pain in the head or eyes; his appetite was good, and general health unimpaired. The eye became daily worse, and at the end of twelve months he entirely lost the use of it.

His left eye then became slightly affected; and has, in like manner, become daily worse; he fancies he can see objects best in the evening. Since his eyes have been bad his spirits have been depressed; his intellect impaired, and memory nearly lost. Countenance dull and heavy, with considerable vacancy; pupils dilated and fixed; eyes in other respects natural.

Empl. Cantharides, temp.

10th.—Unguent. Cetacei, gr. iv. Strychninæ, gr.  $\frac{1}{2}$ , alt. mane appl.

15th.—Says his head is clearer, and thinks he can see better with the left eye.

R Pulv. Strychnin. gr.  $\frac{1}{8}$ , bis in die.

22d.—Has been absent since the morning of the 16th. He says that at times he fancies himself rather better, and again he thinks he is worse; is entirely free from pain in the head or eye, but had some twitchings in the thigh.

Rep. Strych.

March 7.—The right eye remains unchanged, but with the left he thinks he can see better than he did on admission. He says he has suffered more frequently from the twitchings across his face and eyes, the right one more particularly.

Not been seen since.

CASE V.—Harriet Stree, æt. 42, admitted Feb. 6th, 1830. Has been married 28 years without children. Catamenia stopped two years since, to which she attributes, in some

measure, her blindness, as previous to this time she had enjoyed most excellent health. She first perceived both eyes to be growing dim, so that every thing appeared clouded, and she was unable to distinguish any object clearly, whether close to her or at a distance; both eyes were affected at the same time, and she has found them gradually grow worse up to the present time, so that she can hardly distinguish light from darkness. About six months after the commencement, she complained of occasional darting pains in the head, and found her legs gradually weakened, becoming quite paralytic. She was at a workhouse for nine months, and then very greatly relieved by warm baths, blisters, and cataplasms, so as to be able to support herself by crutches. In this state she applied at the Eye Hospital, for the cure of her sight, in February 1829. She was bled from the jugular, and lost blood by cupping, but did not find her eye-sight in the least improved. The paralysis was, however, so much benefited that she was able to go about without crutches.

7th.—Strychninæ, gr.  $\frac{1}{4}$ , c. Cerat. Cetacei. gr. vi. alt. mane.

15th.—No change. Rept. Strych. in pulv. 22d.—The same.

March 1.—No change.

8th.—Has merely had slight flashes of light passing across the eyes during the last week, but says she has not felt any alteration in her vision.

17th.—No effect produced; sight the same.

Rept. Pil. ter die, gr.  $\frac{1}{8}$ .

22d.—During the last two days she has suffered from shooting and darting in the right temple, and occasional flashes of heat half an hour after taking the pill.

Rept. Pil. gr.  $\frac{1}{4}$ .

26th.—On the 23d she was taken with sudden spasmodic twitchings of the legs, which lasted for three hours, and then gradually went off. She did not experience any pain in her head, or any other inconvenience. The sight is not the least improved.

Pt. in usu Pil. ter in die.

28th.—Desired to omit.

In these five cases we observe they are all particularly equally circumstanced as relates to the character of the disease; the manner in which it came on; its duration before the strychnine was resorted to; and the age of the patients.

In the first case the disease had existed two years in the right, and one in the left; the patient was in perfect health at the time, and could not attribute it to any thing. He was nearly totally blind. The strychnine was here tried for seven weeks. The nervous system was evidently affected, but his

eyes continued getting worse during the treatment.

In the second, the disease was nearly of two years' duration in the right eye, coming on without any known cause, with general paralysis. The left eye had been affected eight weeks; vision only confused in the left. The strychnine was employed two months, with evident and considerable benefit in the left eye, and temporarily in the right—short, however, of perfect restoration of sight.

In the third case the left eye had been affected sixteen, and the right six months. No general paralysis; vision almost totally lost. The strychnine was employed six weeks. There were no symptoms indicating the system generally affected, and not the slightest alteration or improvement of vision.

In the fourth case the right eye had been diseased two, and the left one year; attributed to exposure to cold, unaccompanied by any general paralysis. Vision of right eye quite lost; left, nearly so. Strychnine tried twelve days, with some appearance of benefit.

In the fifth case both eyes had been affected two years; the disease attributed to the suppression of the catamenia; affected with paralysis six months subsequent to the commencement of dimness. Scarcely able to distinguish light from darkness. Strychnine tried seven weeks; nervous system affected by it. No improvement.

We have here five patients, all between thirty and forty-three years of age, suffering from amaurosis nearly two years, uncomplicated with any other organic lesion of the eye; the iris only of the one benefited was in some degree diseased.

In the first case the strychnine was employed seven weeks, with no benefit;—second, two months, with considerable improvement;—third, six weeks, no improvement;—fourth, twelve days, with some appearance of benefit; the patient absented himself, however, rather militates against this conclusion;—fifth, seven weeks, no improvement.

The conclusion, then, is, that out of four, the most recent one was considerably benefited. The other, forming number four of the series, it is hardly fair to include, from the short time the remedy was tried.

This report has occupied more space than was intended. These cases, however, so nearly similar, formed so favourable an opportunity of testing a remedy, evidently of great power and value, in a disease hitherto incurable, that they appeared worthy of being fully considered. As the subject is one of some interest, it will not, perhaps, be considered too long.

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SATURDAY, JULY 10, 1830.

LECTURES ON SURGERY,

*Delivered at St. Bartholomew's Hospital,*

BY WILLIAM LAWRENCE, F.R.S.

LECTURE LVIII.

*Dislocations of the Jaw—of the Vertebra—of the Ribs—of the Pelvis—of the Clavicle—of the Shoulder—of the Elbow.*

GENTLEMEN—The joint that is found between the condyles of the lower jaw and the base of the skull, admits of dislocation only in one direction, and that is forwards. This takes place in consequence of the depression of the jaw being carried farther than the configuration of the bone properly admits, so that the convex surface of the condyle passes in front of the eminence, which is placed before the depression that lodges it; the condyle slips over the eminence, and thus the bone becomes dislocated in the direction in which I now place it. This accident does not usually take place in consequence of direct violence; it is more commonly the result of extreme depression of the lower jaw, that is, from an imprudently wide opening of the mouth. The only variety to which this dislocation is liable is this,—you may have the two condyles dislocated at the same time, or you may have one dislocated separately, the other remaining in its natural position; the former occurrence, however, is the more frequent of the two.

When the bone has passed into this unnatural position, the mouth remains permanently open, the patient being incapable of closing it; and there is an interval between the teeth of the upper and lower jaw of an inch and a half. In the first instance the mouth is, in fact, more widely opened; but it is gradually closed a little, though you will observe that the relation between the coronoid process of the lower jaw and the anterior prominent part of the os malæ presents a mechanical obstruction to its being closed beyond a certain extent.

The symptoms of this occurrence, therefore, are a separation between the upper and lower teeth of about an inch and a half, which cannot be diminished by the voluntary power of the patient—an involuntary flow of saliva; for it appears that the salivary glands undergo irritation in consequence of this unnatural position of the lower jaw, and of course considerable imperfection in the performance of articulation.

Now this dislocation is easily reduced. All that you have to do is to introduce the two thumbs into the mouth and press with them upon the molar teeth, while you elevate the chin with the fingers at the same time. Thus you depress the condyles, and carry them back into the cavity from which they have departed. The same process is to be employed in cases of the dislocation of one condyle, observing that you merely apply the force, in that instance, to only one side of the jaw.

*Dislocation of the Vertebra.*

The first vertebra of the neck and the occiput are so firmly tied to each other, that they do not admit of luxation by external violence; but the first vertebra may be dislocated upon the second, for the occiput and the first vertebra revolve upon the second vertebra with considerable freedom of motion. In this motion, therefore, when carried beyond a certain extent, dislocation may occur, and a separation of the second vertebra from the first vertebra (the atlas) will be the consequence. If this dislocation be of such a nature as to liberate the dentoid process entirely from the ligamentous connexions, so as to allow of its pressure upon the spinal cord, the accident is immediately fatal.

It happens sometimes that luxation takes place either between the occiput and the first vertebra, or between the first and second vertebrae of the neck, in consequence of disease. That is what I have already mentioned to you under the name of *consecutive* dislocation. A very considerable change of the re-



lative position takes place between these bones, and the disease which produces the displacement may come to a natural termination; and that the bones may become ankylosed in the new situation to which they have been brought, those examples which have occurred clearly prove—but they really are so extraordinary in their appearance that one can hardly account for a patient surviving the changes that have taken place.

[Mr. Lawrence then presented a specimen, and said]—This is an instance of that kind in a young person, where the first vertebra has been dislocated upon the occiput, or the occiput upon the first vertebra (whichever way you put it); and the occiput and the first vertebra taken together, are dislocated upon the second vertebra; so that, on opening the skull and looking at the base, we found the dentoid process of the second vertebra, which should be connected by a ligament to the under part of the foramen ovale, sticking up into the foramen at the base of the skull; and the foramen magnum, through which the spinal cord should pass, diminished, so that there was hardly room for it. The space I have just alluded to is reduced to about one-third or one-fourth of the natural dimensions. The articulations between the occiput and the first and second, and between the second and third, and third and fourth vertebrae, are all ankylosed, so that their processes are united by osseous structure in their unnatural position. There are other specimens similar to this contained in various collections.

This is the result of disease occurring in the articulation, which subsequently becomes ankylosed; it is the result of inflammation and ulceration of the articular cartilages of the affected bones. The ulceration proceeds and produces caries of the articular surface of the bone itself. This disease proceeds to a natural termination, and ends in bony ankylosis.

The disease, in the first commencement, is attended with great pain about the upper part of the neck, with an inability to move the occiput, and with such uneasiness produced on motion, that the patient holds and supports the head with both hands, and moves the whole of the trunk together when any lateral motion is required. In raising the head from the pillow, or laying it down again, the patient holds it carefully, to prevent any kind of sudden shock occurring from the motion of the diseased surfaces against each other. Very frequently matter forms in the neighbourhood of the disease, just as a similar collection forms in the vicinity of diseased lumbar vertebrae. This matter may find an exit at some part of the lower portion of the neck. In consequence of disease of this kind occurring so near to the base of the skull, and in the neighbourhood of various important organs, it frequently happens that

cases terminate fatally at a comparatively early period; but if the strength of the patient be sufficient to carry him through the early period of the affection, as the specimens I have exhibited and also other specimens shew, there is power in the economy of repairing the effects of such disease, and of leading to a permanent cure. The individual from whom this specimen was taken did not die in consequence of this particular affection, for it had gone through all the successive stages, and come to a complete cure, before the termination of life. This is a specimen of dislocation occurring in consequence of disease; though a similar dislocation or displacement of the dentoid process, the result of external violence, would, in consequence of the sudden action of pressure upon the spinal cord, have been immediately fatal.

When you examine the mode in which the different bones that compose the spinal column are articulated to each other—when you see the broad surfaces by which the bodies of the vertebrae are joined, and observe the very powerful ligamentous connexions between them, through the medium of the inter-vertebral fibro-cartilage—and when you observe further, how the articular processes of the vertebrae reciprocally overlap each other above, and again below—you will be inclined to be suppose that the representation which is generally given in surgical works on this subject is correct—namely, that dislocations cannot occur in the spinal column without the existence at the same time of fracture. Generally speaking, the articular processes overlap each other—that is, the inferior articular processes of the upper vertebrae overlap the superior ones of the lower vertebrae; and again, the articular processes of the lower vertebrae overlap those of the vertebrae next in order; so that the different bones are mechanically locked together in such a way that you cannot conceive how an articular process in one situation can separate without serious fracture taking place at the same time. You will find in most anatomical and surgical works, the position laid down *absolutely*—that dislocation of the spine cannot take place without the existence at the same time of fracture in some portion of the vertebral column; and no doubt, generally speaking, this is a correct representation. But an exception must be made in respect to the vertebrae of the neck, for there the articular processes approach more closely to plain or flat surfaces. In the upper part of the neck particularly, there is not that reciprocal overlapping which I mentioned to you as existing in the vertebrae of the back, or the vertebrae of the loins; so that you may have a dislocation of the vertebrae of the neck without fracture.

A case occurred in this hospital, and came under my own care, in which the fourth cervical vertebra was dislocated upon the fifth,

and I found the inferior articular processes of the fourth vertebra had passed in front of the superior articular processes of the fifth, and the body of the fourth vertebra had been displaced forwards upon the body of the fifth, in consequence of rupture of the intervertebral-fibro-cartilage—but no fracture existed in that instance.

[Mr. Lawrence here presented the specimen shewing this accident.]

Now I may observe to you, that the result of the accident is this:—the effect upon the spinal marrow, and the symptoms that occur in the case, are exactly the same as would take place if the accident were—what it more frequently is, a fracture of the spine. Until we come to examine a case, we cannot know, in point of fact, whether an injury of this kind be a fracture or a dislocation, or whether it be fracture and dislocation combined together. The question, therefore, is one rather of an anatomical than of a practical nature. There is no difference of symptoms—there is no difference of treatment. We cannot recognize, during life, the existence of dislocation; and if we could, I do not know that we could venture to put into practice any means for reducing such a dislocation.

I am not acquainted with any instance of dislocation occurring in the *dorsal* or *lumbar* vertebrae, and I believe all accidents occurring in these regions consist of fracture of the spinal column, which I have already had occasion to speak of. There is, however, another species of dislocation incidental to the cervical vertebrae, and that is, dislocation of the articular processes on one side only. The inferior articular process of one side slips in front of the superior articular process of the vertebra below, and the neck gets a lateral inclination towards one side. This is an accident not attended with any material diminution in the size of the vertebral canal—it is an accident that does not produce pressure upon the spinal cord—which produces none of those serious symptoms that take place when there is a complete dislocation or a complete fracture. It is, however, rather an uncommon occurrence, but still here is a specimen of that kind.

[Mr. Lawrence then presented a specimen.]

#### *Dislocation of the Ribs.*

I do not know whether it can be correctly stated to you that the *ribs* are unsusceptible of dislocation, but I never knew any instance of the dislocation of a rib out of the articulation which connects it with the dorsal region of the spine. The ribs are there so completely covered by muscles and other soft parts that if such an accident were to take place I do not know that it would be possible to recognize it. The elasticity of the cartilages in front, and the firmness of the ligament which connects them to the sternum, are pro-

bably reasons why the cartilages of the ribs are not dislocated from the sternum in front.

#### *Dislocation of the Pelvis.*

The bones of the *pelvis* admit of being separated from each other in consequence of external violence, but the accident which thus takes place is hardly to be assimilated with those separations of a bone from its corresponding articular surfaces to which the name of dislocation is more commonly applied. The strength of the connexions between the various bones of the pelvis is such that they cannot be separated, except under the application of a very great degree of force—such as that of the wheel of a loaded carriage going over the lower part of the trunk of the body; and if separation take place, it is generally accompanied by fracture of the bones, with rupture of the vessels, and extensive injury of the soft parts in the neighbourhood; so that these accidents are usually fatal.

The separation, when it takes place, does not admit of being restored; we cannot adopt any means of drawing these bones into their natural situation again. All that we can do in unfortunate cases of this kind is to lay the patient at rest, and keep him perfectly quiet. You might, however, mistake the change of position in the lower extremity, produced by fracture of some part of the pelvis, for dislocation of the hip-joint; and it is therefore necessary that you should be on your guard against such an error. I have seen the *os innominatum* separated from the sacrum behind at the same time that fracture occurred in the pubes and ischium in front, so that the lower extremity altogether was drawn up something into the position in which it would be drawn in consequence of luxation of the hip upwards and outwards; and, in fact, extension was applied in that case, but the patient died within twenty-four hours. It is necessary to be on your guard against mistakes of this kind; and, in general, luxation with fracture of the pelvis is attended with such serious symptoms as sufficiently to shew that the nature of the case is much more important than a mere dislocation of the hip.

#### *Dislocation of the Clavicle.*

The *os coccygis* may be dislocated, but I fancy it is a rare occurrence; and if it take place I do not know that we have the means of replacing it. This bone may be liable to fracture occasionally.

The *clavicle* may be dislocated at either of its extremities. It may be dislocated either at the sternal or the scapular end; but the ligaments which connect it both with the sternum and with the scapula are so strong, that this accident is much more uncommon than fracture of the bone. As the clavicle is covered on the superior surface merely by the integuments, the change of figure which results from dislocation of either

end is so obvious that the nature of the occurrence is immediately recognized.

It is very easy to reduce and to replace the dislocated clavicle, but it is by no means so easy to retain it in its position when it is replaced. I believe there is no other kind of displacement of the sternal end of the clavicle except forwards, by which the sternal extremity comes to lie anterior to the upper or first bone of the sternum, and there you immediately perceive it makes an unnatural prominence clearly distinguishable through the skin.

Now if you carry the upper extremity into the same position which you do in reducing a fracture of the clavicle, you will also reduce this dislocation. You may carry the bone back to its natural position, and by pressing with your finger, you can keep it in that position. But dislocation cannot take place without a rupture of the strong ligaments that hold the clavicle to the sternum; and, therefore, when the force is removed which has been employed to retain it in its position, the bone immediately separates again. I fancy the only kind of apparatus you can trust to for retaining a dislocated clavicle in its place, is the same that you would employ in the case of a fracture of the clavicle—that is, a thick wedge-shaped cushion placed in the axilla, so that the bone of the arm forms a kind of lever for drawing the clavicle outwards, and thus preventing it from passing in the front of the sternum. But this apparatus, or any other that I know of, is usually found ineffectual for retaining it in its position; and therefore it is very fortunate that after recovery from an accident of this kind, although the clavicle is not in a natural position, the motions of the limb are perfectly recovered.

The *scapular* extremity of the clavicle admits of displacement upwards, so as to rise above the acromion; or the acromion seems to be seated below it, and that, so far as I know, is the only displacement incidental to this end of the bone; and this, like the sternal luxation, can easily be reduced. You can press with the thumb or finger the scapular end of the clavicle back to its position; but the same difficulty occurs as in dislocation of the opposite extremity—you cannot keep the bones in their proper situation; and in the instances that I have seen, there has remained a permanent inequality in the situation in question. The clavicle has continued to be higher in point of situation than the acromion, yet the motions of the upper extremity in general have been tolerably perfect.

#### *Dislocation of the Shoulder.*

The *shoulder-joint* is more liable to dislocation than any other articulation in the body—indeed, it is not only more liable to dislocation than any other joint, but so much more liable, that I believe we may say

the instances of dislocation of the shoulder equal in number the dislocation of all the other joints taken together. The looseness of the articulation, the looseness of the ligament which surrounds the articular end of the bone, the large size of the head of the humerus compared to the size of the glenoid cavity of the scapula which corresponds to it, the great use that we make of the upper extremity, and the considerable force that is applied to it in various movements of the frame, account for the great number of dislocations of this joint. The humerus is in general thrown from the glenoid cavity of the scapula downwards, displaced in a direction towards the arm-pit, the weakest part of the articulation being that which corresponds to the axilla. There the synovial membrane is not covered either by any ligamentous fibres or muscles, so that when a person falls to the ground, and puts out his arm to support him, the arm being thrown forcibly upwards, the head of the bone is carried out through the weak part of the synovial membrane towards the axilla, and becomes seated below the glenoid cavity of the scapula. That is the most common dislocation of the shoulder-joint, and constitutes what is commonly called *dislocation of the shoulder into the axilla*.

When this accident has occurred, one of the most striking symptoms of it, that which is immediately visible, and which you cannot fail to recognise when you come to look at the shoulder, is the vacancy under the acromion. The edge of the acromion is prominent and sharp, the deltoid muscle, instead of forming a convexity passing down the arm, has its fibres drawn in a straight line, and you see a kind of hollow or depression which is very conspicuous when contrasted with the opposite side of the body; in fact, the head of the humerus is no longer situated immediately below the acromion. You observe, that in the natural position, the fibres of the deltoid muscle describe a convex line in passing over the head of the bone; but when the bone is thrown into the axilla, the fibres of the deltoid muscle pass in a straight line down to their insertion in the humerus. Not only is there this straight direction of the fibres of the deltoid muscle, but they are also tightened—the insertion is moved to a greater distance from the origin, so that they are stretched, and appear tight and tense. Then the head of the humerus can be felt projecting into the cavity of the axilla. Of this you are not very sensible if the patient holds the limb as much down towards the side as he is capable of doing; but if the arm be elevated—if the elbow be carried upwards, then by putting your hand in the axilla, you are immediately sensible that this convexity is produced by the head of the bone in the axilla. These are two symptoms which alone would be



sufficient to characterise the accident; but there is at the same time a remarkable difference in the direction of the axis of the os humeri. In the natural state of the parts, the axis of the os humeri, when the arm hangs by the side, is nearly parallel to the trunk of the body—in fact, a line from the elbow to the shoulder is as nearly as possible parallel to the side; but when the head of the bone rests against the inferior edge of the scapula, you observe that the axis of the humerus forms an oblique line from the trunk. Instead of the bone passing directly upwards to the glenoid cavity, it seems to go inwards towards the trunk of the body—it has quite a different direction to the natural line of the axis of the bone. Then the patient cannot draw the elbow into close contact with his body, but it remains sticking out from his side. It is true that if the surgeon take the elbow and carry it forcibly inwards, with a good deal of pain to the patient, it may be brought in contact with the body; but when left to itself, it is held at some distance off, and moving it towards the trunk is so painful that the patient can hardly be prevailed upon to do it by a voluntary effort. There is considerable pain felt in the situation of the shoulder—a pain which, perhaps, in a great measure, is referrible to pressure produced by the head of the humerus upon the large nerves that constitute the axillary plexus. These nerves pass along the surface of the shoulder-joint, and the bone cannot be displaced in this direction without exerting more or less pressure upon them. Such are the symptoms which characterize the most common dislocation of the shoulder-joint. The vacuity under the acromion—the tense state of the fibres of the deltoid muscle—the unnatural swelling in the axilla, caused by the presence of the convexity of the head of the humerus in that part—the inability of the patient to bring the elbow down to the side—and the change in the direction of the axis of the humerus, so that instead of running from the elbow upwards to the glenoid cavity of the scapula, it seems to turn inwards towards the trunk—the pain in the shoulder generally, more particularly towards the axilla—the want of power on the part of the patient to execute the ordinary motions of the elbow joint—and the stiff manner in which the bone is held in its unnatural position.

The reduction of this displacement is by no means difficult—it is accomplished by attention to two or three very simple points, more especially in the recent state of the accident. You fix the chest of the patient, by a broad linen bandage passed round the outside, to any firm or immovable object. Supposing the case of dislocation of the left shoulder, for example—you pass a bandage round the chest, and confine it to an upright post, tying it in a firm knot, so that the chest of the

patient shall be firmly confined to the fixed point which steadies the chest, and through it fixes the scapula. You then place the bandage by which extension is to be made upon the humerus, immediately above the elbow, and you let it be drawn by a requisite number of assistants, the arm being carried in an horizontal position. Thus you have the chest fixed on one side, constituting the counter-extension, and the force applied upon the humerus immediately above the elbow constituting the extending power in an opposite direction, and these two forces acting in points exactly opposed to each other, the effect will be to draw the head of the bone out of the axilla; but still drawing it out of the axilla does not bring it back to the glenoid cavity. Then when you have extended it sufficiently, you depress the lower end of the bone, that which is towards the elbow, by means of which you push the head of the bone up into the glenoid cavity. Now this is easily accomplished, by the surgeon having his knee placed under the bone near to the joint. He keeps his hand upon the head of the bone, and when he feels that it is moved out of its situation in the axilla, he directs the assistants who are employed in making the extension suddenly to let go: he then carries the cubital or lower end down over his knee, and elevates the head of the bone into its natural place. There is then in the reduction of the shoulder the same principle employed as in the reduction of other dislocations: the counter-extension, by which the scapula is fixed—the extension by which the bone is drawn out of its preternatural situation—the elevation of the bone so as to carry it into its right position in respect to the glenoid cavity; in doing which the bone is moved with the hand over the knee of the surgeon, as over a lever. These are three points of the process which are to be attended to.

The reduction of a dislocated shoulder is very conveniently accomplished by means of a four-post bedstead, if the bedstead be tolerably firm. Let the patient sit with the trunk close to one post, and confine the chest with the broad band to that post; then, having fixed the extending band to the bone, carry it round the opposite post, and let it be drawn by assistants. Thus you have two fixed points, by which extension and counter-extension can be very conveniently managed; the surgeon places his knee under the head of the bone, so as to make the limb act as a lever when the extension has arrived at a proper degree, and thereby complete the reduction.

The reduction of a dislocation of the shoulder in a recent case is generally accomplished so easily, that you may sometimes effect it without any very close confinement of the patient. It is sometimes sufficient to accomplish the counter-extension—that is,

to fix the trunk by placing part of the sheet round the body, and letting assistants hold it, (the force of assistants is often found sufficient for this purpose,) and letting other assistants pull in an opposite direction; but if you meet with difficulty this mode will not do, but you must have recourse to the method I have already mentioned. It has sometimes happened that a surgeon has reduced a dislocation of the shoulder without the application either of extension or counter-extension at all. If the patient be weak, and his attention be diverted to something else, the surgeon—taking the head of the bone in his hand, and placing his knee in the axilla—has been able to draw it into its place by that moderate degree of force—but this is not the case usually. There is a mode frequently employed in reducing dislocations of the shoulder which has been strongly recommended by Sir Astley Cooper, namely, by means of the surgeon placing his heel in the axilla of the patient. The patient is placed in a recumbent posture, either on the floor or on a couch, and the surgeon sits opposite to the patient, on the same side as that on which the dislocation has taken place; he then puts his heel in the patient's axilla, and grasps the fore-arm above the wrist, or has a handkerchief or a towel put above the cubital end of the humerus, and makes extension with that, while his heel, placed in the axilla, forms a lever, by means of which the bone is pushed into its place when extension has been carried to a proper degree. This is a mode which Sir Astley Cooper has recommended as being generally effectual, and quite easy, in the reduction of recent dislocations of the humerus.

Now when the humerus has been replaced, it will be proper that the limb should be kept quiet; in fact, it will be best that the arm should be bound to the side of the body, in order to keep it motionless, and that the fore-arm should be supported in a sling, and this mode of proceeding should be continued for some days, in order to allow of the rent of the orbicular ligament (through which the dislocation has taken place) being repaired, and in order to admit of the rupture of any tendons or ligamentous fibres, and the effect of any laceration of the muscular parts, or any contusion about the joint, being completely recovered from, before the use of the joint is resumed. You will recollect that dislocation cannot take place in any joint without considerable injury to the surrounding soft parts—without extensive laceration, distention, and straining of the ligaments, tendons, and fibres, and it must be very apparent to you that the repair of such injury must require repose for several days, or weeks, and sometimes a combination of other antiphlogistic means, and that if you neglect these, you may look for inflammation of the joint as the consequence. In the case of dislocation of the

shoulder particularly, where the natural configuration of the bones, and the nature of the ligamentous restraints which belong to that joint, predispose so much to dislocation, the reproduction of displacement, after it has once occurred, will take place with great ease, unless these means of precaution are observed; and I may add, that the observance of such precautionary measures may be considered as necessary generally in all cases of dislocation.

Now the humerus may be dislocated in other directions,—it may be thrown out of the glenoid cavity towards the front, that is, it may be dislocated towards the concavity of the scapula; in which case the head of the bone lies below the subscapularis muscle.

Sometimes the head of the bone is found lying but a little below the margin of the clavicle, and it is said that that displacement is a secondary one,—that the head of the bone is, in the first place, thrown out of the articulation at the under part or towards the axilla, and the action of the muscles subsequently carries it upwards and forwards into the neighbourhood of the clavicle. The dislocation forwards is not an uncommon one, but much less frequent than the dislocation into the axilla.

There is still another dislocation to which the arm is subject, but this is comparatively rare; a dislocation in which the head of the humerus is thrown backwards, and lodges in the infra-spinal fossa of the scapula, below the spine of the bone. Now it appears that Desault never saw this luxation of the bone backwards; but Boyer witnessed it in one instance, and Sir Astley Cooper mentions that in the course of thirty-eight years' practice he has seen two cases in which the head of the humerus was thrown backwards in the infra-spinal fossa: I have never myself seen dislocation in that direction.

Whether the bone be dislocated forwards, or whether it be carried upon the clavicle, or whether it is dislocated backwards, there is still the same symptom—the irregularity under the acromion, the additional symptom produced by the head of the bone being in one or other situation which it ought not to be in—and there is the impaired motion of the joint.

With regard to the replacement, the general principles that I have already mentioned to you as applicable to dislocation into the axilla, are applicable to these several other kinds, so that I have no particular directions to give in respect to them.

#### *Dislocation of the Elbow.*

The elbow-joint is liable to different kinds of dislocation; the most common one is that in which the radius and ulna are thrown backwards upon the humerus, or, perhaps, if we were to speak more correctly, and according to the mode in which the accident absolutely takes place, we might say that

the humerus is thrown forwards upon the radius and ulna. It is the consequence of a fall upon the ground on the hand, in which the weight of the body tends to throw it forward upon the radius and ulna. The radius and ulna are carried backwards and upwards, and the humerus projects forwards below the articular surface of these bones.

In consequence of this accident, the coronoid process of the ulna, which in the state of extreme flexion is received into the anterior excavation of the humerus, passes into the deeper excavation behind the bone, in which the olecranon is ordinarily lodged; the olecranon, therefore, is situated considerably higher on that part of the limb than it should be; the radius is situated on the back of the external condyle of the humerus, instead of corresponding to the inferior end, and there is a large and hard swelling on the front of the elbow, produced by the unnatural prominence of the articular extremity of the humerus: the elbow is perfectly stiff, it is incapable of flexion or extension, the motions of pronation and supination are at all events very difficult, if not entirely suspended, and the elbow is kept either in an unnatural straight position, or in a position in which the limb is only slightly bent. If the accident be seen soon after its occurrence, before swelling has come on, the change in the relative bearing of the bones is so considerable that no mistake can possibly be made respecting it. However in this, as in all the accidents that take place about the elbow, dislocation is attended with the application of so much violence, so much laceration and bruising, that very speedily after the occurrence of such injuries a degree of inflammation supervenes, swelling takes place, and this usually to so great a degree as to obscure very much the exact nature of the injury. It is therefore of great importance in all instances of this kind to institute a careful examination at the earliest possible period after the receipt of the injury. You can then recognise the various bony points about the articulation—you can satisfy yourselves as to the facility with which the different motions are performed—you can gain evidence on these points at that time, which you would look for in vain if twenty-four hours had elapsed from the period of its occurrence.

Now you will easily see that the radius and ulna cannot be thrown backwards upon the humerus, without a rupture of all the strong ligaments which usually retain them in their position; there must be so great a degree of violence offered to the joint, that no difficulty will be experienced in drawing the bones down, and bringing them back to their right places. All that is requisite to be done in this case is, to fix the arm firmly on one side, and extension should then be applied just above the wrist in an opposite

direction; you have only to draw the bones straight, and they will come down and resume their proper situation. Nothing can be more simple than a reduction of this dislocation; and the evidence that the bones which were dislocated have been replaced consists in a complete power of bending and extending the joint, and in the complete restoration of the motions of pronation and supination.

The force under which this dislocation takes place is sometimes so considerable as not only to separate the humerus from the radius and ulna, but even to force the end of the humerus through the muscles which cover the joint in front, and through the integuments—thus producing compound dislocation. You may have the articular end of the humerus forced through the skin, and presenting itself externally through a large laceration on the anterior part of the elbow-joint. When you first see an accident of that kind, you are inclined to infer, that so great an injury cannot be repaired, and that it is necessary to remove the limb. However, many instances have occurred in which the bones have been replaced in their proper position, the integuments have come together, and the cases have really done well, without any very serious symptoms arising during their progress; so that compound luxation of the elbow-joint, with the protrusion of the lower extremity of the humerus through the integuments, is by no means necessarily to be regarded as a case for amputation. It is a case in which recovery may take place, if you restore the parts to their proper situation, and approximate the edges of the external wound; and not only does recovery take place, but recovery accompanied by complete restoration of the motions of the joint.

We should expect that this displacement would involve a rupture of the brachial artery; however, in the instances that I have alluded to, the cases have done well; and the probability is, that the artery had slipped to one side and escaped laceration. But if, at the time the accident happened, the brachial artery were ruptured, that would constitute certainly a serious complication of the injury, and perhaps it might create some doubt respecting the course of proceeding that it would be proper to adopt. If, however, there were merely this circumstance in addition to the accident, without any very violent laceration of the soft parts—without fracture of the bones, or other serious complication, the power of the collateral circulation is so great in the upper extremity, that we should probably deem it expedient to try the effect of securing the vessels, to prevent them from bleeding, and then attempt to save the limb.

It is said that the radius and ulna may be dislocated *forwards*; however, I never saw an accident of this kind; it is very rare; and as it would involve a fracture of the ole-



cranon, so it would be, in effect, a case of fracture. You cannot have the radius and ulna dislocated from the humerus forwards, without the olecranon being broken of; for the configuration of the bones will not admit of it.

The radius and ulna may be dislocated *laterally*—that is, they may be driven to one side. You may have dislocation *outwards*, so that the trochlea of the humerus would correspond to the articular extremity, which usually receives the radius; or you may have the dislocation in an opposite direction, *inwards*, so that the trochlea of the ulna would correspond with the external condyle. These accidents, like the former, are extremely obvious, the nature of the case being visibly seen, and they are easily replaced. The strong ligaments are all ruptured; in proceeding to the reduction, therefore, no particular obstruction is felt in pushing the bones back to their former position.

There may be a dislocation of the *radius* alone; but I fancy you can hardly have a dislocation of the *ulna* alone. You may have the radius dislocated either forwards or backwards, in consequence of the hand being carried in a forced state of pronation or supination. In the one case the head of the radius is seated in front of the external condyle of the humerus; and in the other, the head of the radius is seated behind the external condyle of the humerus; and the consequence is, a prominence so conspicuous, that the nature of the accident can hardly be misunderstood. Now this dislocation is rare in comparison with those in which the bones are displaced together. I have mentioned to you that I have seen the accident in both situations; there is, however, a very marked contrariety, in respect to their experience upon this subject, between Sir Astley Cooper and Boyer. Boyer says that the radius may be thrown backwards upon the external condyle, and that he has seen the occurrence twice; but that he is not acquainted with any examples existing of its being thrown forwards. Sir Astley Cooper mentions six instances of dislocation of the radius alone, in which the bone was thrown forwards. In two of these, one of which was seen by myself, and another by Mr. Cline, and though in a recent state, the dislocation could not be reduced. I think in two instances Sir Astley succeeded in reducing the dislocation. He mentions one instance in which he saw the luxation backwards; that was an old unreduced dislocation.

The mode of reducing dislocation of the radius, whether it take place forwards or backwards, is by making extension from the wrist. If the bone should have been dislocated forwards, you make extension, and at the same time carry the radius in the direction of supination; if, on the contrary, the luxation should be backwards, you carry the radius in the direction of pronation.

## LITHOTRITY.

### *Lithotritry considered in relation to the state of the Bladder.*

Translated from the Manuscript of  
BARON HEURTELOUP.

[Continued from page 462.]

WHEN we examined the bladder in relation with the instruments calculated to pulverize the calculi, we considered each of the parts to which our attention was drawn when in their natural state, and such as they are generally found; but there are certain subjects in whom this organ is altered by malformation, either naturally or as the result of disease; and these vicious conformations and diseases are sometimes obstacles to the easy performance of the operation; at others they may be carried to such an extent as to forbid any attempts.

It has been already demonstrated what are the ordinary dimensions of the bladder, and we have seen that those which were the most favourable to the operation were, when the bladder had from three to three inches and a half from the front to the back, and from side to side. Sometimes the sound, when introduced, indicates larger dimensions than those we have pointed out as the most favourable to the success of the operation; or again, that the two diameters of the bladder are very small: this condition is more unfavourable in proportion to the largeness of the stone, which may require a wide expansion of the branches of the instrument before it can be grasped. Sometimes the anterior posterior diameter is only from an inch and a half to two inches: this condition is so much more unfavourable, as the bladder is very large in its lateral diameter. When this is the case, the anterior posterior diameter being very short, and the lateral very long, the seizing of the stone is rendered impossible. I observed one of these cases in the patient of a physician at Paris: though the stone was only of moderate volume, neither M. Le Roy nor myself could ever succeed in grasping *the stone*. The instrument was introduced, and on its branches being opened as far as the contracted diameter would allow, we could scarcely obtain the sensation that the stone was

there, which was always found very much either to the right or the left, and constantly beyond the reach of the instrument. This patient underwent the operation of lithotomy, and recovered.

The *bas fond* of the bladder is also sometimes malformed by internal hemorrhoids. When they exist in great number in the rectum, they render this intestine voluminous, and projecting against the bladder, form a prominence which impedes the free movement of the instrument, and renders it more difficult to seize the fragments. An accumulation of fecal matter in the rectum produces the same effect, but this is easily remedied by an enema.

Before we conclude our remarks on the difficulties which malformation of the bladder gives rise to in lithotritry, we must advert to a state which gives great trouble, and when excessive, has been termed "*la vessie à colonne*." When this condition is only carried to the moderate extent which we have pointed out as being very common, it is of slight importance, and does not embarrass the practised lithotritter; but when it goes on to such a degree that the mucous membrane is formed into little sacs, which increase in size in proportion as the bladder contracts, this is a troublesome condition, requiring the greatest prudence in the manœuvres, and still more in the choice of the instruments employed; that they be so constructed that the branches shall, as rarely as possible, come in contact with the irregular walls of this organ. It is only by movements, well and skilfully combined, that we can avoid entangling the branches in this description of bladder, particularly where the stone is large enough for the pieces sometimes to be of moderate size, so that they may be lodged, not in slight hollows, but absolute pockets, varying in size. These pockets are not formed by the mucous membrane only which dips in between the sides of the muscular fibres, forming those kinds of cords which are called "*colonnes*," or columns, but they are organized, and established in little sacs, for which there exists a layer of muscular tissue, reflected from the mucous membrane, so that they appear like small bladders superadded to the large one.

It is very evident that from the moment the anomalies of the bladder are the subject of consideration, litho-

trity becomes of very obscure and uncertain application; for if calculi are formed in the cavity of one of these organs, at one moment they will be found in the *bas fond* of the bladder, and the next instant escape the instrument, and get lodged in one of these anomalous cavities, from which they will again escape if the opening of the cavity be large and well developed, as they sometimes are.

These anomalies are not so rare as may be imagined, for we have seen in the various museums of pathological specimens a considerable number of examples. The museums attached to the principal hospitals of London particularly, have numerous specimens collected within the last few years, and which not only shew the malformation of which we are now speaking, but afford us the example which we at present require, namely, that the pockets contain a greater or smaller number of stones in proportion to their size and development. Of course in such cases it will be readily believed that the surgeon must call into play all his tact, joined to great skill, to inform himself of these particulars; this is, however difficult, very possible by means of the *recto-curvilinear* sound, which allows the most attentive and delicate study to be made in the interior of such a diseased bladder, which, nevertheless, presents difficulties quite insurmountable to the lithotomist as well as the lithotritter.

In fine, there are bladders with two lobes, and even three; that is to say, composed of two or three cavities, the principal of which communicates with the urethra, and the others join with it by openings varying in size, but some not presenting a larger entrance than that formed by the opening of the urethra into the bladder—so that each lobe is like a small bladder furnished with a separate neck. The two-lobed bladders, having one lobe in front and another behind, are among the most frequent of these malformations. When the opening by which they communicate is very contracted, and not central, this peculiar formation would almost certainly escape observation even in an attentive examination; but when the passage between them is, on the contrary, large, a surgeon may obtain sufficient information to determine on the line of conduct to be pursued. These malformations, though infinitely more rare than the

sacculated bladders before described, are yet met with sufficiently often. I have seen several examples, and possess myself one of a bilobed bladder, divided from the front to the back, in which there is a stone in each lobe: however, it is of importance to know that if the bilobed bladders are very rare, the disposition, which may be considered as the same, very slightly developed, exists frequently. In fact, we meet—and I have met with one example in a patient—bladders which are not absolutely bilobed, but in the centre there is a sensible contraction, which is sometimes owing to an organic disposition, which, at one time, gives an absolute, at another, a relative form to the organ. It will be remembered what I mean by an absolute or relative form.

The dimensions of the bladder, considered in an absolute manner, give also the means of judging with what degree of facility lithotripsy may be performed. When the bladder is very small, or still more very large laterally, these are conditions less favourable than when the organ is of moderate size. Too small, a large stone is seized with difficulty, from the want of room for the extension of the branches; when too large, on the contrary, the fragments require to be sought for a long time, for scattered on a large base, they do not fall so immediately under the branches of the instrument. When the bladder is of moderate size, every thing is easier, for the small and large stones are found with greater facility in the axis of the instrument, and fall into its power with greater rapidity and less trouble. A diseased state of the bladder gives also numerous indications to the surgeon.

Catarrh of the bladder is that diseased state which is met with most frequently in calculous patients, and gives rise to considerations of some importance with relation to lithotripsy. The first of them is, that it is rare that a person has the stone and catarrh of the bladder unless this last affection is sympathetic with the first: it is only when the stone has existed for a long time, and the bladder become contracted and thickened, that the catarrh becomes idiopathic, that is to say, that it does not stop though the stone be removed, which is proved by patients who have undergone the operation of lithotomy, and been cured, but still retained a catarrh of the bladder

after the wound had closed. These examples are rare; for when a catarrhal patient's organization is deeply affected, it is not common for them to recover after lithotomy. As long as the diseased state of the mucous membrane does not coincide with the diseased state of the muscular and cellular tissue, which produces the thickening of the walls of the organ, and that rigidity which renders it incapable of distention, the catarrh does not form a prohibition to the operation. We have, in fact, performed this operation on several patients who were thus affected, and who did not appear to possess greater sensibility when the instrument came in contact with the organ. Among these, two, more especially, had bladders so catarrhal that the mucus which was deposited each night at the bottom of the vessel, weighed seven or eight ounces. The patients underwent the operation, and were cured both of the stone and catarrh. In both we observed that each sitting was followed by a perceptible diminution of mucus; it did not, however, totally disappear until a few days before the cure was completed; the distention of the bladder, also, in these patients, was as easy as in perfectly healthy persons. We do not purpose, by these examples, to prove that catarrh is always accompanied by this easy distention of the organ; we would only prove that this affection of the mucous membrane does not prevent the application of the lithotritic instruments whenever it is joined with this capacity for distention in the bladder; for in this case the disease is confined to the mucous membrane. If the muscular membrane be involved for any length of time, the bladder becomes small, contracted, and impedes the action of the instruments by its smallness, and often by its extreme sensibility.

Though a simple mucous catarrh does not prohibit lithotripsy, it is not the same with a muco-purulent catarrh, and especially if hemorrhagic. True this catarrh only exists in those patients who have suffered from calculi in the bladder a very long time, and which are, consequently, very large, forming another ground for prohibition, but it is also very generally accompanied with great disease of the kidneys. These patients, then, are not fit subjects for lithotripsy, and it would be, perhaps, almost equally imprudent to cut them



for the stone. It is well understood that I speak here of muco-purulent and sanguineous catarrhs, and which always remain the same, and not those which take on this form accidentally, and at distant intervals.

If the catarrh of the bladder be only an insurmountable impediment to lithotritry when the stone has acquired large dimensions, and there is also a diminution of the cavity of the bladder, owing to the thickening of its walls, it is clear that if the stone be very small, and the bladder catarrhal and shrunk, lithotritry is practicable, not only on account of the smallness of the stone, but because being small, it has only been formed within a short period, and that the smallness of the bladder is not produced by the thickening of the walls, but by the irritation produced by the presence of the stone, which is most commonly crumbly, brittle, and easily pulverized. In treating of the different kinds of calculi we have accounted for this species of stone causing so much irritation.

If the cure of calculous patients can only be obtained by means of lithotritry, on condition that the fragments are removed by the expulsive efforts of the bladder, the degree of contractile force which the bladder possesses ought to be accurately ascertained before we decide upon performing the operation. But the absolute and permanent paralysis of the bladder from injury to the spinal cord, accompanied with symptoms which denote that the inferior organs participate in this paralytic effect, absolutely prohibit any attempt at operation, for the fragments would assuredly remain in the bladder; and the evil is not great in these patients, for the stone does not generally cause much pain; and in the state of insensibility to which they are reduced, they have little desire to be relieved of an enemy which the sedentary life they are compelled to lead enables them to humour.

Between a state of perfect insensibility, however, and the absolute loss of contractile power in the bladder, and the natural and healthy state, there are a great number of intermediate grades, which give rise to many especial considerations.

Has the non-contractile state of the bladder arrived at such a pitch as to lead us to believe the fragments would be voided slowly, and with difficulty? We must then take into consideration

the volume of the stone; for if it be large it is probable that the bladder will be unable to empty itself of all the fragments, either by its natural expulsive power or by the means which art has devised to assist the removal of the fragments. If, on the contrary, it is small, it may be easily extracted, if it cannot be expelled.

Is the non-contractile state moderate? Do we find that the patient voids his urine, though he does not completely empty the bladder? The operation should be commenced even though the calculus should have attained a moderate size; for the pulverization of the stones, in these patients, produces the salutary effect of giving energy to the organ, which finishes by expelling the fragments with sufficient activity. We have treated and cured one of these patients, in whom the apathy of the bladder was carried to such a degree that, the nonchalance of the patient assisting, he voided his urine sometimes from the overflowing of the bladder, so as to steep the sheets during the night. After the two first sittings, this patient had not expelled any fragment; but after the third, they came away in considerable quantity for several days successively. This patient was completely cured, and with so much greater facility that the bladder, possessing but little sensibility, and remaining distended for a long time without contracting, formed one of the conditions the most favourable for the rapid and successful progress of the operation; as also the facility which the patient afforded me for the manœuvring of the instruments, and the time he allowed me for their action each time. This stone, though large, only required five sittings.

I have met with some other patients in whom there existed a sort of inertia in the bladder, which did not completely empty itself; but this state always yielded to the action of the lithotritic instruments.

Polypus in the bladder, and the vegetations which we sometimes find in this organ, must also influence the success of lithotritry. It is clear that if the lithotritter was sounding a bladder thus diseased, he would have sensations communicated to his hand which would lead him to suspect this state, if they did not lead to absolute certainty. He would have to act with great gentleness and prudence, and abstain altogether

from further attempts, if the case appeared to him one of too great doubt. We have never met with a parallel case, at least, that we have ascertained as such, but we believe it would be easy to perceive, in a case where the vegetations, so large as to float in the bladder, were seized between the branches of the instrument, that it was a body of this nature. It might, perhaps, be desirable to extract them, if we possessed the exact certainty of such a state of things; but as this certainty can only be acquired with great difficulty, the better course to adopt, perhaps, is to abstain altogether. Besides, to decide in a case of this description, it must first be offered to our examination; perhaps, after an attentive research, and having experienced the sensation of touching a soft and floating body, and always met under the same circumstances and after the same manœuvres—perhaps we might determine to attempt the extraction of it with the lithotritic forceps, or an instrument constructed *ad hoc*.

Sometimes the membrane of the bladder is simply fungous and soft. This state does not absolutely impede the operation, but it is disadvantageous, inasmuch as the fragments are not so distinctly felt or so easily seized. And again, these kinds of bladders bleed on the least contact of the instrument, which renders the operation less satisfactory for the lithotritic surgeon, who, in the generality of cases, when he operates well, ought never to cause an effusion of blood. *Au reste*—these patients, with fungous and bleeding bladders, are generally relieved after the lithotritic attempts; and this I have observed several times, in direct ratio to the blood lost;—of course it is understood that this hæmorrhage is the result only of the simple contact of the instrument with the membrane, and not the lesion of the organ, caused by an awkward or rude manœuvre.

A varicose state of the neck of the bladder is also a circumstance unfavourable to the rapid progress of the operation; it does not make the introduction of the instruments very difficult, but it impedes the expulsion of the fragments.

In fine, organic disorders, when they exist to a great extent, whether of the organs themselves or those adjacent, may either render the operation very difficult or forbid it altogether. We

will not stop to detail what these disorders are, but we will indicate the nature of some of them, in order that our readers may understand what we allude to.

Malformation of the pelvis—an exostosis in the interior of this cavity—unnatural adhesion of the bladder—a sac of hydatids—a developed ovary—the state of gestation—may deform the organ in which we would operate, and prevent it.

One of the causes which renders lithotritry difficult, is the powerful contractility which exists in the bladders of some patients. Notwithstanding a healthy state of the organ, a small stone, which may only have been formed within a short time, in some patients excites such a degree of spasm and contraction as to render the operation a very painful process. We have seen, in these patients, to what an extent the contractile force of the bladder may go. Sometimes it will allow a moderate injection to be made, but the water once introduced, the bladder expels it with violence, notwithstanding an instrument has been chosen of sufficient size apparently to block up the canal. At other times, again, the contraction is so strong that it scarcely will allow one or two ounces to be injected. Again, the water does not escape, but the instrument is instantly grasped and can no longer be moved; the contraction ceases in a short time, and the instrument becomes free, and the operation may be continued. These are some of the difficulties which the surgeon experiences, and which the contractile power of the bladder is the cause. We have established, in the examination we have made of the physiological functions of the bladder, the laws by which the contractions are regulated. These laws, well understood, ought to regulate the conduct of the surgeon with respect to these contractions, both before and during the operation.

#### *Lithotritry considered with relation to the state of the Stone.*

As we have devoted a chapter to the examination of calculi, and the influence which their position, form, size, and number exercise on the science of lithotritry, we will limit ourselves here to some propositions which shall express in a precise manner the degree of influence which the stones possess on the

practice of lithotrity, considered in each of the relations which we have spoken of.

Thus we will lay down as a principle, that, first, relative to their position, the further the stone is from the axis of the instrument, the less easy it is to seize.

That with regard to their form, the rounder or flatter the stone may be, the more easily it is seized and destroyed; for, in the first case, the *evidateur* attacks them from the first instant, to a greater extent; and in the second, the *brise coque* seizes them without difficulty, and breaks them up at once.

That, in relation to their size, lithotrity is easy and quick, in an inverse ratio to their volume; and that, besides, the dimensions of the stone ought always to be considered, not in an absolute sense, but always relatively to the capacity of the organ.

That, considered with relation to their number, the size being equal, it is easier to pulverize one than many.

That, with regard to the nature of their surface, the more polished they are, the more slippery and difficult to seize, especially when of considerable size.

These axioms may perhaps appear futile, and too simple to claim a place in this chapter; but if it be remembered that lithotrity, so far from being clear to every one, by some persons is yet regarded as an operation which ought to succeed equally well on all patients—that it ought to be equally applicable, and practised in a case of small or of large stone—in a case where the calculi are numerous, or where there is only a single one—in a large, healthy, and slightly irritable bladder, as in one which is contracted, irritable, and diseased, it will no longer excite surprise that we should write axioms so simple that the *amour propre* of the surgeon is hurt in reading them. May they lead this operation to be considered in a more philosophical manner, and convince surgeons that, if they have seen patients placed in the favourable condition of having a small stone promptly removed by means of the lithotritic forceps, there are other patients that cannot obtain the same benefit from the same instrument, and which required of science more prompt and efficacious means! It was this assistance which we have endeavoured to procure them by our own labours.

Here we terminate the chapter which

we have devoted to the examination of the circumstances which may contribute to the success of the operation of lithotrity, render it difficult, or entirely prohibit its application. We trust that, after having methodically followed the series of organs and organic parts which might naturally impede the operation, we have made clear to all our readers the nature of the difficulty which each might give rise to. We have thus been obliged, as it were, to dissect our subject, and to bring to view each of the parts. We have seen how imperative it is to the surgeon to examine each of these parts, and how many peculiar circumstances it was necessary he should know—how much, in fine, his art required, both of tact and delicacy, to practise it with all the perfection desirable. His art exacts constant attention, care at every moment, long habit, and deep study, to enable him to decide on the expediency of commencing the operation, and of continuing it when once begun.

As long as the patients who offer themselves are favourably circumstanced, of middle age, with a small calculus, a large urethra, and a moderate sized bladder, well formed and not very irritable, the means required to obtain a cure are easily employed; at least as far as the action of seizing a stone with gentleness in the bladder and reducing it to fragments, and even to take these fragments and again reduce them, can be easy. But as soon as the circumstances are no longer equally favourable—that the stone is rather large, or the bladder somewhat irritable and contracted—his task is changed; it now requires more tact, and instruments more perfect, prompt, and energetic in their action, and the power of appreciating what he ought and what he ought not to do.

The lithotriter is not always placed between the evident opportunity of acting or refraining. He is often obliged to hesitate about the method. On one side, circumstances induce him to believe this manner of acting preferable, while, on the other side, by apparently equally good reasons, he is led to reject them. He remains undecided. This indecision would be extremely painful to him, did he not know that lithotrity presents the consoling possibility of making attempts. The more perfect are his instruments, and the more energetic



is their action upon the stone and their movements gentle in the organ, he knows he may give himself up with greater confidence and security; giving sufficient care and patience, method, and more particularly prudence, he may try the operation itself, if it be useful to his patient. He is aware lithotrity is not like lithotomy: he knows that lithotomy cannot be regulated in its execution—that it cannot be accommodated to the susceptibility of the patient—that we cannot stop when we deem it right to resume it at another period. He feels that lithotrity, on the contrary, yields to the surgeon's will—to the desire and sensibility of the patient; that he can shorten or lengthen the sitting, and, in fine, accommodate the steps of the operation to the feelings of the patient. Happy is it to possess, in a doubtful case, a means by which we may, as it were, regulate at will the *intensity*—may try to gain results—stop if they are unfavourable, or continue if they answer his expectations. In this manner it often happens that there are, in the course of the operation, a succession of alternatives; and even if he fails in obtaining the complete cure of his patient, he generally finds, in his careful and prudent attempts, the satisfaction of seeing that he has succeeded in procuring his patient a degree of relief from pain which he has not enjoyed for a long period.

## DISEASES OF THE SKIN.

[Continued from page 466.]

### *Lepra.*

A REMARKABLE form of this disease—so peculiar, indeed, that, but for its sometimes occurring simultaneously with the *lepra vulgaris*, it could hardly be suspected of having any relation with that malady—has been frequently observed at the Hospital St. Louis. It may be called the *lepra giganta*, or *lepra annulata*. The trunk, and especially the back, is the seat of one or more large red annular patches, whose diameter is sometimes above a foot, while the inflamed circumference is at no part much above an inch in breadth, and the whole central area is quite healthy. The diseased part may, for convenience of de-

scription, be distinguished into three concentric rings of about equal breadth,—that is, each being about half an inch broad. All three are in close union with each other, and are of the same deep red; but the middle ring is considerably elevated, while the two enclosing it are simply erythematous. No scales have ever yet been discovered; but the elevated portion has not a tuberculous character; so that until this singular affection has been found in conjunction with other diseases than lepra, or until some new traits have been observed in its aspect, it may as well remain in the nosological situation which Biett and his followers have assigned it.

Of *pityriasis* it may be mentioned that it will sometimes appear as a consequence of great moral emotion.

*Psoriasis*.—In some obstinate cases of this disease—cases which have by many physiologists been set apart, under the title of *psoriasis inveterata*—the exfoliations are exceedingly abundant and minute, so as closely to resemble fine bran, or oatmeal. This powdery substance lodges in the fissures by which the skin is minutely intersected. In a few rare cases, this state of surface has had existed over the whole body, giving the sufferer a most unique and disgusting appearance. The slightest motion causes new clefts in the skin, with an oozing of blood. The nails turn yellow, then crack and fall off, to be succeeded only by scaly and shapeless incrustations. This most aggravated species of psoriasis is generally confined to the old, the ill-fed, or the uncleanly; but it has attacked young and healthy people, guilty of no neglect of their persons, and has in such circumstances appeared to give extraordinary power to the digestive organs!

Small scales of psoriasis are sometimes found in infants, at the angles of the eyes and on the eyelids; while, at the same time, there may or may not be other parts of the face affected with the same disease. The itching is apt to be very urgent; and whether from the nails being used by the little patients to relieve this symptom, or from the inflammation being propagated by mere continuity, there is often serious conjunctival ophthalmia.

Psoriasis is not unfrequently situated exclusively on the back of the hand and fingers; and in France this variety, as well as a form of eczema, goes by the

name of the baker's itch (*gale des boulangers*).

*Papular Diseases.*—Mr. Lawrence, in his general remarks upon this order, has stated, that “sometimes an affection which is originally papular, may form small vesicles, or pustules, before it disappears.” The learned lecturer, no doubt, alluded to lichen agrius, which, in the course of its progress, will often assume an appearance at first sight very similar to that of eczema, or impetigo, when their vesicles or pustules have coalesced and broken. But an attentive examination of the lichen agrius, even when its papulæ are ulcerated at top, and are so thickly set that the small ulcers become confluent, will shew us that neither vesicles nor pustules are characteristic of that disease. It begins with distinct papulæ; and though many of them may subsequently be obscured by the occurrence of ulceration, yet there are always enough left in their primitive state to render the diagnosis pretty clear.

*Lichen.*—A very remarkable form of this eruption has been observed and described by M. Bielt, who has proposed for it the name of *L. gyratus*. It is characterized by the appearance of small groups of papulæ, disposed in the form of a stripe or band, which, commencing on the fore part of the chest, proceeds to the inner side of the arm, and then passing over the space between the inner condyle and the olecranon, follows the course of the ulnar nerve to the very extremity of the little finger.

*Prurigo.*—The papulæ constituting this troublesome disease, besides being of the natural colour of the skin—at least in their early stage—differ further from those of lichen in being larger and flatter, and in being attended with an itching that generally is far worse than in the worst forms of lichen. It is, perhaps, in consequence of this last distinction that the pimples of prurigo are so soon covered with small blackish scales, or crusts, which appear to consist only of dry congealed blood that the patient has drawn by scratching. These scabs are seldom or never met with in lichen.

*On the Nature of Cutaneous Eruptions.*—The reason which Mr. Lawrence assigns for not entering into a lengthened description of the complaints of the skin, is, that “in their essential nature

there is no great difference among them;” or—as he afterwards asserts still more roundly—that “the essence of each of them is the same.” (See page 160, column 1.) He admits, however, that “in the various affections of the skin, we see different *modifications* of inflammation;” and he alludes to the exanthemata, as furnishing examples of the *simplest kind* (not the *slightest degree*) of it. Now when we see a modification, or peculiar kind, of disease propagated by contact, from one patient to others, without the transmission having deprived it of any part of its peculiarity, we surely may consider such disease as having a proximate cause essentially different from that of other diseases which are incapable of being so communicated. But, setting aside the contagious eruptions, are we warranted in considering all other diseases of the skin as being only different effects or results of one same inflammation? If to change an efflorescence into a papular rash, or papulæ into vesicles, or vesicles into pustules, nothing more were necessary than to ascend a step, a degree, in the scale of inflammatory action, then might we at will produce any of these elementary forms of eruption; and after covering the subject of our experiment with pustules, we need only withdraw our irritants; and as the pustules faded into vesicles, as the vesicles dried into papulæ, and the papulæ were lost in efflorescence, we should have the further satisfaction of beholding a sort of inverted reflection of the appearances we had given rise to. Then, too, in the development and decline of a disease attaining to the pustular state, and presenting successive crops of eruption, we ought to perceive, first, erythema, then vesicles, and so on, till we returned to efflorescence again. But no such thing occurs, or can be made to occur. Inflammation is evidently a *genus* and not a *species*; and its subdivisions require as much distinction in practice as they merit in abstract pathology. To conclude this paragraph, the following table, which gives all due importance to the acute and chronic *degrees* of inflammation, will shew at the same time that something more than either *degree* or *duration* (considering the term “chronic” to signify both or either) is requisite for the determining of inflamma-

tion to any particular form of cutaneous disease.

*Table of Eruptions, as being acute or chronic.*

1. Generally acute.  
Exanthemata.
2. As often acute as chronic.  
Vesiculæ.  
Pustulæ.
3. Generally chronic.  
Bullæ.  
Papulæ.
4. Always chronic.  
Tuberculæ.  
Squamæ.
5. Generally permanent.  
Maculæ (*hardly inflammatory*).

Following the course of Mr. Lawrence's lectures, we next meet with general observations on the *Treatment of Cutaneous Diseases*. With respect to the use of *purgatives*, it may be added that their employment is not only serviceable when the digestive organs are disordered, but also, and perhaps as frequently, when they are quite healthy, as these organs may then be safely acted upon with the view of producing a *derivation* from the skin. Small and repeated doses are to be given, and from time to time intermitted. If, in the intervals thus allowed, the chylopoietic functions return completely to their usual state, and the external disease is unaltered, we may resume the purgative system without fear, and with fair hopes of ultimate advantage. The internal administration, either of *acids* or *alkalies*, has often appeared to have a specific effect against that distressing symptom, *itching*, when in other respects the disease of the skin has been unabated by them. The same benefit is often derived from fomentations with *decoction of Dulcamara* or *Hyosciamus*, when the ordinary means are unavailing. Local vapour-baths are also deserving of more general attention than is accorded them in this country: they are greatly in vogue at Paris; as also are *local fumigations*, especially the *sulphurous*. In many obstinate eruptions, such as lepra or chronic eczema, the *Tincture of Cantharides*, in very minute quantities, gradually increased, is of unrivalled efficacy. The stomach and urinary organs must be carefully attended to during its use, the former especially in females, and the

latter in men. The *subcarbonate of ammonia*, in small doses, likewise has great power in the same class of cases. The powdered bark of the root of the *asclepias gigantea*, (Madarrh), given in three or five grain doses two or three times a-day, is said, upon good authority, to combine, with a very powerful tonic operation, the faculty of stimulating the cutaneous vessels, while the general circulation is diminished; three indications which, in the treatment of diseases of the skin, it is often most desirable to fulfil simultaneously.

*Blisters*, the use of which in one form of erysipelas has already been adverted to, are of equal advantage in acne indurata, when the secondary tubercles are few, and confined to a small surface. Among the various *ointments* to which is attributed a power of modifying the action of the skin when diseased, and of resolving the tubercles and indurations to which that membrane is liable, there are three that especially merit notice. The first has for its basis the *protiodide of mercury*, of which a scruple, or half a drachm, is incorporated in an ounce of lard. For the second, a *deutiodide* of the same metal is used, in the proportion of from ten to twenty grains with the above quantity of lard. Lastly, an ointment, which for the purpose specified, is preferred by Bielt to all others, is composed of twelve or fifteen grains of the *iodide of sulphur*, and an ounce of hog's-lard. This preparation, in the hands of that most skillful and scientific practitioner, has produced the happiest results in a variety of tedious cases: in acne indurata, porrigo favosa, and lepra; in those indolent tubercles that remain round the scars of a half-cured lupus; and, moreover, in the tubercles of lues. In porrigo, Dr. Duncan (Prof. Mat. Med. Edinb.) makes much use of an ointment of *Cocculus Indicus*,—one part of the powdered berries to two parts of hog's-lard.

*Tinea Capitis, Elephantiasis, Lupus*.—It is not easy to surmise for what reason these three diseases were separated from the rest, as though having no affinity with any of them, or why Mr. Lawrence should throw them together into one lecture, as if they had some great neutral resemblance. Porrigo is purely pustular; of elephantiasis there are two distinct forms, and only one of them is properly admissible into the sys-



tem of Willan and Bateman, where it ranks with the tuberculæ; while lupus is so irregular, so inconstant in its appearances, that it must be acknowledged as something altogether *sui generis*. In respect to *porrigo*, it is well known to have a clear notion of the two forms of pustule which are observed in the several species of the disease. *Favi* are small, round, embedded in the skin, and full of a thick straw-coloured pus, which soon concretes, forming a thick cellular crust, which has often a deep concavity at its surface. The pustule, on first appearing, has a well-marked central depression. *Achores* are generally somewhat larger, irregular, superficial, and formed by a collection of fluid matter, which raises the cuticle; they are apt to be confluent: the scabs which follow are rather large than thick, and are of a laminated texture. Pustules of the latter kind so closely resemble the *psudracia* of impetigo, that Bielt is disposed to confine the generic name of *porrigo* to those species which consist of *favi*, viz. the *P. favosa* and *P. scutulata*. The *P. furfurans* is sometimes only pityriasis, and sometimes chronic eczema. The *P. decalvens* is but a partial baldness, which may result from many different complaints of the scalp. The *crusta lactea* probably belongs to impetigo. On the pathology of elephantiasis, lupus, ichthyosis, and one or two other striking forms of cutaneous disease, the author of the above comments may possibly offer a few remarks in some future article.

Φ

#### CASE OF HYDROPHOBIA (?) CURED

ENSIGN HILL, 10th regiment, quartered at Bandon, was attacked with pain in his head and shivering, on Saturday, November 14th. On Sunday morning he was ordered a full dose of extract colocynth and calomel, which operated freely. On Monday morning following, all the usual symptoms of synchus appeared aggravated, when a solution of tartarized antimony, with the liquor ammoniæ acetat. was given him every hour, until his stomach and bowels were freely acted upon. Nothing very unusual occurred in his case, and he appeared to be going on favour-

ably until the following Friday morning, when he shewed great horror at the appearance of any kind of fluid, and though his mouth was parched, and he felt the strongest inclination to drink, yet, on putting the vessel to his lips the whole of the muscles of his throat and neck were thrown into violent spasmodic action; deglutition was so difficult that, on repeated trials, he could only get down a very small quantity, the greater part of which was rejected. At the commencement of his complaint his pulse was steadily at 90, but on the appearances above described the pulse suddenly fell to 70. There was also a complete remission of the febrile symptoms. It will be necessary to mention here, that on observing an inflamed sore on the back of his hand, his medical attendants were informed by his servants, that, about three months before, Mr. Hill had received a bite from a dog, which continued sore and inflamed for some weeks, and afterwards healed. Upon receiving this information, apprehensions were entertained that he was then labouring under the first stage of hydrophobia; his eyes shewed that timid and distrustful expression so remarkable in the true rabies canina. On Saturday he had several paroxysms, which greatly strengthened the fears entertained by his medical attendants. The muscles of his throat and neck were again thrown into violent convulsive action; his legs also were affected with cramp, and the muscles of his face were greatly distorted; his expressions, when understood, were desponding, and he was incessantly looking at the hand which was bitten, and rubbing it with the other; he called continually on his attendants to wipe the blood from his hand, which he thought trickled from the wound; he made frequent motions with his right arm, as if in the act of beating off a dog with a whip, and frequently called to his servants to drive the dog from him. His bowels, at this period, had been confined for two days, and he had a tympanitic distention of the abdomen. An enema composed of sp. terebinth. ol. ricini and tinct. jalapæ comp., &c. was administered, which, though retained an unusually long time, came away unmixed with any fæces. He also got a large dose of ext. hyoscyamus, with calomel, suspended in mucilage; only a small proportion of the medicine was swallowed.

It was found necessary, in consequence of the repeated exertions he made to get out of bed, and the consequent debility produced by his resistance to being held down, to put a straight waistcoat on him. Opiate frictions were used over the regions of the stomach, throat, and neck. His mouth and throat were clogged with a viscid secretion, which he was constantly endeavouring to remove by putting his fingers into his mouth. He constantly complained of a horrid sensation all over his neck and back, as if horse-hairs were sticking into his skin. It will be interesting to mention, that at no period of his life, even after using violent exercise, was he ever known to perspire. At eight o'clock on Saturday night he was placed in a warm bath, heated to 98 degrees of Fahrenheit; he remained in it for better than half an hour, when all the bad symptoms vanished, and he seemed inclined to sleep before he left it. After the use of the bath it was found unnecessary to confine him in the straight waistcoat, from his having become perfectly quiet. In a short time a copious and general perspiration broke out over his whole body, and he fell into a profound sleep, which continued from eleven o'clock at night until six o'clock next morning.

Sunday, 22d Nov.—Appeared much refreshed; his bowels still confined.

R Ol. Ricini,  $\mathfrak{z}$ j.

Tinct. Jalapæ Comp.  $\mathfrak{z}$ ss.

Aq. Menth. Pip.  $\mathfrak{z}$ j. M. ft. haustus statim sumend.

He swallowed the draught with much difficulty. At twelve o'clock he had a large fetid stool, and in the course of the day he had two others equally copious, which entirely removed the tension of the abdomen. In the course of the day he took some gruel mixed with wine, and continued tranquil until night, when he became restless. He passed a very disturbed night.

Monday, 23d.—All the bad symptoms returned. He could not get down a drop of fluid, though most anxious to drink. The viscid secretion in his mouth and throat almost suffocated him, and he was constantly raving about the dog, and looking at the hand which was bitten. The opiate frictions were again had recourse to, but they failed to produce any sedative effect. During the continuance of the paroxysms his pulse invariably fell to 70 in the minute, and

in their absence rose to 90. His dread of water was now so great that we feared to attempt placing him in the warm bath, and at seven o'clock p.m. he had such severe spasms, attended with hiccup, that we agreed upon giving 100 drops of laudanum in a little cinnamon water; this was effected by getting the spoon over his tongue and holding his nose. Half an hour after he had swallowed it he became rather more tranquil, and at eleven o'clock same night he got another 100 drops, which produced some sleep. Towards morning he became again restless, when 80 drops more were given at four o'clock, after which he had a quiet uninterrupted sleep, which lasted for six hours and a half. He awoke quite refreshed, and free from spasm. His pulse had again risen to 90.

Tuesday 24th.—He took some gruel, with wine, at intervals. During the day, two aperient draughts were administered, but without effect. At eight o'clock p.m. he got a large dose of calomel and scammony, which produced two stools black as ink.

Wednesday 25th.—Passed a disturbed night; abdomen distended; urine scanty and high-coloured; tongue foul and chapped; pulse 90.

R Olei Ricini,  $\mathfrak{z}$ j.

Tinct. Sennæ Comp.  $\mathfrak{z}$ ss.

Aque Menth. Pip.  $\mathfrak{z}$ j. M. ft. haustus statim sumendus.

The medicine produced seven stools; the last three were perfectly green, and without fetor.

Thursday, 26th.—Had a good night, and took a good deal of nourishment; pulse soft and regular, at 90. His aperient draught was given him this morning, and operated four times; what he passed was black and fetid; and at seven o'clock p.m. the spasms again attacked him with such violence that he was obliged to be held down in his bed. His pulse fell to 70, and his extremities were quite cold. His pulse became so feeble and thready that some warm undiluted wine was poured down his throat, which revived him. His belly was again distended, and he had a constant inclination to pass wind. Urine high-coloured, and frequently passed in small quantities. A turpentine enema, with  $\mathfrak{z}$ j. tinct. assafœtidæ, was thrown up the rectum; he retained it for an hour, when it brought away a great

quantity of wind, which relieved the tympanic distention of the abdomen. At ten o'clock p.m. he complained of great pain in the course of the rectum. A starch injection, with tinct. opii, was given, and he was able to swallow a small draught, with 40 drops of tinct. hyoscyami. A large tin vessel, filled with hot water, was placed at his feet; after which he fell into a sound sleep, which lasted during six hours, and next morning he was free from all pain.

Friday, 27th.—During the whole of this day he continued quiet, sleeping at intervals; his drinks consisted of barley-water, apple-tea, and he got some chicken-broth, which last appeared to heat him, and it was discontinued.

Saturday, 28th.—Passed a very restless night, and complained this morning of sore throat, body being hot, face flushed, and great anxiety; pulse 102. On examination his throat was found to be much inflamed; the belly was distended, and painful upon pressure, with loud crepitus.

R Infusi Sennæ, Comp. ℥ij.

Magnesiæ Sulph. ℥j.

Tinct. Sennæ, Comp. ʒvj. M. ft. mistura cujus sumat cochl. duo ampla alternis horis donec alvus soluta fuerit.

A blister was applied to his throat; he had five stools, mixed with bile, during the day, and of a better consistence than before. At night he was much relieved; the blister rose well, and he could take his drinks freely; felt inclined to sleep.

Sunday, 29th.—All his bad symptoms removed; he passed a good night, with the exception of being disturbed two or three times whilst at the stool. His pulse 88; tongue moist and clean; the temperature of his body natural, and was crying out for food.

Monday, 30th.—Was able to sit up for two hours without much exhaustion; took chicken-broth and calves' feet jelly often during the day. His strength continued to improve, and in three or four days he was able to walk about the room with assistance. His mind seemed perfectly free from all apprehensions connected with the bite he received from the dog, and every thing went on well until Thursday, the 7th of December, when he complained of great uneasiness in his bowels, attended with a sense of weariness and constant inclination to go to

stool, without the power of passing any thing except slimy matter, tinged with blood. His pulse rose up to 102, and tongue foul. He got ℥j. castor oil at 12 o'clock; and as it had not operated at 4 p.m. it was repeated. He had two stools, nearly of the same description, with a quantity of wind; he got a common domestic injection at 9 o'clock p.m. which came away without procuring any relief.

On Friday, 8th January, we were greatly alarmed on finding that during the preceding night he had passed nearly four pounds of coagulated blood, unmixed with any feculent matter, but having a very offensive odour. He was in such a state of exhaustion during the whole of the day that it was judged prudent not to give him any medicine. He drank freely of barley-water, and was much inclined to sleep. Pulse 112, tongue foul and dry.

Saturday, 9th.—Had little or no refreshing sleep; belly much swelled, and painful upon pressure; a great quantity of wind was discharged from the bowels, but no evacuation of fæces or blood; urine passed in great quantity, of a high colour, and muddy, having a very offensive smell. His belly was fomented, and an enema was thrown up with the addition of Tinct. Assafœtidæ, ℥ij. He obtained some relief on the enema coming away; two others of the same kind were administered during the day, but no feculent matter passed.

R Hydrarg. Sub. Muriat. gr. vi.

Pulv. Jacobi ver. gr. ij.

Conserv. Rosæ, q. s. ut ft. bolus nocte sumendus.

Sunday, 10th.—Had a very disturbed night; no stool; passed much wind; pulse 130 and feeble; great thirst and heat of skin, with much excitement.

R Infusi. Sennæ, comp. ʒvi.

Magnesiæ Sulph. ℥j.

Tinct. Sennæ, comp. ʒvi.

Antimon. Tart. gr. ij. M. ft. mistura capiatur cochl. duo ampla omni quaque hora.

10 o'clock p.m.—Passed a little grumous blood without affording any relief.

Habeat Enema ut Antea.

R Calomel, gr. x.

Pulv. Jacobi, gr. iv.

Mucilag. G. Arab. q. s. ut ft. bolus statim sumendus.

Monday, 11th.—All the symptoms the same as yesterday; bowels not re-



lied; abdomen much swelled and painful. The fomentations were frequently repeated; and two pints of warm water were injected into the rectum with a patent syringe. In about half an hour the water came away, mixed with a quantity of fetid grumous blood. He received some relief, and the same quantity of warm water was thrown up again at night with the same effect.

Tuesday, 12th.—Had little or no sleep; great debility and constant thirst. As all purgative medicines and injections failed to give any relief, they were omitted, and his strength was kept up by barley-water, with mulled wine, grapes, and ripe oranges. The warm water was again injected, and brought away some clotted blood, which was fetid in the extreme. The injection was again repeated at night, in a larger quantity, and was attended by the same discharge.

Wednesday, 13th.—He was reduced so low as to render it necessary to give him brandy mixed with water, equal parts of each, half an ounce every half hour. He drank plentifully of his other drinks. He continued to pass urine in proportion to the drink he took, but nothing came from his bowels except when the warm water was thrown up, and it came away mixed with grumous blood, but no stercoraceous matter.

Thursday, 14th.—Continued all day nearly insensible; pulse 130; extremities cold, and constant hiccup. At 9 o'clock P.M. we had lost all hope of his recovery. Nearly three quarts of warm water were injected; it continued to ooze from the rectum for two hours; when, at the end of the third hour after it was injected, the remainder came away with great force, and along with it about four pounds of hardened faeces, mixed with bile. After this evacuation he lay as if dead for nearly an hour, during which stimulants were applied externally and internally. His belly was swathed with flannel, well wetted with camphorated spirit of wine; his feet were kept warm by artificial heat, and he was fed frequently with liquid jelly, chicken-broth, brandy and water, &c. It would be unnecessary to dwell longer upon this extraordinary and perplexing case, except to remark that our patient had no one symptom of the spontaneous hydrophobia during his last attack; and the impression of what

he had suffered before seemed entirely removed from his mind; he grew progressively better from day to day, taking little other medicine than the mildest purgatives when his bowels indicated any want of healthy action. Great attention was paid to the quantity of nourishment he consumed, as his appetite became voracious. Jellies, oysters, wild fowl, &c. constituted the principal articles of his food, together with a moderate allowance of wine. He was able to leave Bandor on Friday, 8th of January, in company with his father and mother, (who had come from England) on his way home. This young officer shewed great strength of mind and patience, under the most acute sufferings, during the whole period of his protracted illness.

WALTER GRANT.

GEORGE LOANE, M.D.

## PERITONEAL INFLAMMATION.

*To the Editor of the London Medical Gazette.*

31, Bedford-street, June 29.

SIR,

I SEND you the following case of peritoneal inflammation, apparently arising from obstruction of the appendix cæci vermiformis, to print or not in your journal as you may think proper. I shall not occupy space with a lengthy detail of symptoms, but shall merely state the leading facts.

Your obedient servant,

LIONELL BEALE.

A. B. a lad of 16, began to complain, June 17, of uneasiness in the right iliac region. On the 18th, when I first saw him, he was suffering from paroxysms of violent pain in the right iliac region, which was very sensible to pressure; some tenderness over the whole abdomen, but diminishing as the fingers receded from the part where the source of the mischief lay. The tongue was furred, and the pulse full and frequent. Bled to 18 oz., 12 leeches to seat of pain. Calomel and jalap. Relieved by the bleeding, and I found him in the evening much better: had six or seven motions.

June 19.—In the morning free from pain, and in all respects better; but in the afternoon the paroxysms of pain returned with fresh violence: there was tenderness over the whole abdomen; tongue very foul; pulse full, hard, and frequent; and every indication of serious inflammation of the peritoneum, except sickness. Being out of town, he was seen by my friend Mr. Walne, of Bloomsbury-square, who bled him to 16 oz. and ordered 16 leeches to be spread over the abdomen. Calomel and opium every two hours. Blood much buffed.

20th.—No essential relief. In consultation with Dr. Bright, of Guy's, bled to 16 oz.; 12 leeches; calomel and opium. Blood still buffed, but not so much as day before.

21st.—Considerable relief from pain. A circumscribed hardness was now discerned in the right iliac region, extending about four fingers' breadth from the groin.

To avoid tediousness, I may state in a summary manner, that leeches, and bread and water poultices to promote the bleeding, were now applied to the part affected; that the calomel and opium were continued without any effect on the mouth; that enemas were administered and stools obtained after some difficulty. We flattered ourselves on the 23d that he was mending; the tenseness over the abdomen had entirely subsided, even in the iliac region, although a circumscribed tumor was plainly discernible. On the 24th he passed a very restless night; very frequent discharges of extremely offensive matter from the bowels. From this time he gradually sunk, and died on the morning of the 25th.

The body was examined the following day at nine, Dr. Bright, Mr. Walne, and myself, being present. There were slight vestiges of inflammation on a few points of the peritonæum covering the small intestines; cæcum, part of ascending colon, and appendix vermiformis, of a dark colour, approaching to gangrene; as were two distant spots of the small intestines, from lying in contact with the diseased part. We removed the cæcum and part of the colon, the inner coat of which was dark, and ulcerated in parts. The lower part of the vermiform appendix was penetrated by ulceration in two spots: about half an inch from its junction with the intes-

tine, its calibre was occupied by something the size of a pea: on cutting down, an acute point of this small body appeared to be sticking into the mucous coat, and on removing a kind of carious matter, the nucleus of this little ball was found to be a small seed, such as is given to Canary birds. The whole of the appendix below the obstructed point was ulcerated or nearly gangrenous. It should be mentioned, that the patient had received a blow in the right groin about three days before his illness. Mr. Walne mentioned, that some time since he attended a child, whom he did not see till in the last stage of peritoneal inflammation; that on examining the abdomen, in addition to the appearances ordinarily the result of fatal peritonitis, he found an abscess of thick matter about the appendix cæci vermiformis. This part contained a plug of hard matter, which appeared to have been deposited in layers on a nucleus. There was a mere point of ulceration through the coats of the appendix. He believed that the peritonitis originated at this point.

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#### FEVER OF THE CRIMEA—DEATH OF THE EMPEROR ALEXANDER.

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The symptoms were, at first, those of a slight catarrh, followed by intermittent fever, which took place at Orlikoff early in November 1825. This in a few days became greatly aggravated, and it then assumed the form of severe remittent fever; a disease which had been extremely prevalent in the Crimea in the preceding autumn, and to which several strangers had fallen victims.

5th November (old style) Alexander arrived at Taganrog. The paroxysms of the fever occurred daily, till the 8th; and as the emperor, during this time, refused to take medicine, or to submit to any treatment whatever, whilst the symptoms continued more alarming, Sir James Wylie, the personal physician of the emperor, called into consultation the empress's physician, Dr. Stophregen. At this period the emperor had frequent attacks of syncope, but the affection of the head did not manifest itself till several days after. On the 13th, Sir James Wylie proposed to bleed

his patient, but he would not on any account submit to the operation; again on the morning of the 14th, both the physicians, and also the empress, earnestly entreated the emperor to have some leeches applied, but he still rejected the proposition with the greatest obstinacy and violence.

When Dr. Stophregen, on his first visit, told the emperor that he was distressed to see him so ill, he replied hastily, "Say nothing of my indisposition, only tell me how the empress is," (she being then affected with a disease of the heart, of which she died some months afterwards). The emperor at the same time said to Dr. Stophregen, "Sir James Wylie believes me to be ill, and therefore wishes some other physician to consult with him; and, as I am always very glad to see you, you may consult on my case together; but do not trouble me with physic."

During the progress of the disease, the emperor obstinately refused all kind of medicine, with the exception of a single dose of calomel; and in the whole period of the case, notwithstanding all the entreaties of the two physicians, and the prayers of the empress, he would take nothing further. In consequence of which, and as he was in great danger, from all the symptoms rapidly getting worse, the priest was now proposed to him, and accordingly he was brought late on the 14th. On this occasion Sir James Wylie was called into the sick room by the empress, for the purpose of informing his majesty that he was in a dangerous state; and since he would not on any account submit to medical treatment, the emperor was therefore urged to think seriously about employing spiritual aid, so long as he retained his senses.

No objection was made to this proposition, and, at five o'clock in the morning of the 15th, he was confessed. At this melancholy ceremony, his majesty requested the priest "to confess him as a *simple* individual, and not to consider him as an emperor;" after this he took the sacrament; and the confessor, like a sensible man and a christian, urged him strongly to employ medical aid, saying that, unless he did so, he had not entirely fulfilled his whole christian duty. The illustrious patient, through this reasoning, now consented to the application of leeches

to the head; but it was too late, and, the following morning, the emperor became completely insensible. At this hopeless point of the disease, it was accidentally mentioned to Sir James Wylie, by General Diebitch, who was then chief of the staff of the emperor, that an old man named Alexandrowich, a practitioner in surgery at Taganrog, had cured some one affected with the same complaint as his majesty; upon which Alexandrowich was immediately summoned in order to answer inquiry into the fact. On his arrival he seemed thunderstruck at the desperate state of the emperor, and said the case alluded to was quite different from his majesty's, for whom, he was compelled to confess, there was no remedy; and the fatal result soon followed.

Sir James Wylie observed, if a case of *lèse majesté* was ever lawful, it would be on an occasion like the present, where a medical man would be perfectly justified in compelling his sovereign to act contrary to his own express commands, and submit to what was for his benefit, and restoration to health.

After death, the body of the emperor was examined. The only appearances found were two ounces of fluid in the ventricles of the brain, save that the veins and arteries of the head were gorged with blood; and an adhesion existed between the membranes of the brain at the posterior part, which appearance had resulted from inflammation at some remote period. Nothing further was observed, excepting in the abdomen, where the spleen was soft and enlarged, which is a very common occurrence in fevers of the country. It is therefore probable, had treatment been allowed, life might have been saved, as no decided morbid changes of structure had taken place.

The emperor did every thing possible to augment the fever, and aggravate the disease. Nor would he even submit to have the common offices required for all sick persons performed to him, but would get out of bed when so feeble that he could hardly make his way back again; he also talked much, and would not remain quiet\*.

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\* From Webster's Travels through the Crimea, Turkey, and Egypt.



DIVISION OF THE SUBMAXILLARY  
AND OTHER NERVES.

*To the Editor of the Medico-Chirurgical  
Review, London.*

SIR,

I OBSERVE in your fasciculus for February last, the description of an operation performed by Dr. Warren, for excision of the submaxillary nerve, extracted from the Boston Medical and Surgical Journal. This mode of operating appears truly formidable, and is probably that which the late Dr. Haighton had in view, when he pronounced the division of this nerve impracticable.

A much simpler, safer, and easier mode of accomplishing the division of this nerve, where it enters the canal of the inferior maxillary bone, is, to make an incision, with a scalpel, from within the mouth to the extent of an inch, through the mucous membrane and cellular tissue connecting the pterygoideus internus muscle, to the ramus of the bone, parallel and close to the inner or mesial surface of the coronoid process immediately behind the dens sapientiae; then to take a round-shaped gum lancet and carry it backwards in a line continuous with the crowns of the molar teeth, having the cutting edge at right angles to the bone, and divide the nerve on the bone. The pain experienced on the division of the nerve at once indicates that the proper organ has been cut. As the internal maxillary artery ascends to the bulbous process of the superior maxillary bone, it cannot be wounded, excepting through ignorance or carelessness; but even if it were, a piece of dry sponge might be easily inserted to stem the hæmorrhage. The gustatory branch of the nerve could scarcely be injured. The dental artery must be wounded, but this is so small as to be of no moment, and, if morbidly enlarged, dry sponge would compress it. I have now performed this operation on four patients for neuralgia of the mental nerve, with perfect success, having previously attended to the chylipoietic viscera, and then tried the various antispasmodics and subcarbonate of iron; also the different counter-irritants—even the moxa; and lastly, the division of the nerve as it emerges at the mental foramen: or, according to

your own shewing—"after the local symptoms from morbid associations, or change of structure, had continued after the constitutional derangement from which they originally emanated, had been rectified—and the consequence had survived the cause." My first case was published in the Edinburgh Medical and Surgical Journal for October, 1821.

Thus there would appear to be a material difference between the division of the trunk of a nerve, where it is protected from the vicissitudes of atmospheric influence by muscular and other soft coverings, and the division of the same nerve, where it is exposed to the alternations of the weather, as far as relates to the permanent salutary result. It is well known, that in neuroma supervening to amputation, the excision of the tumor, or tumors, proves a more permanent or radical cure than a secondary amputation; also in neuralgia following the same operation, excision of the nerves does the same, and evidently in consequence of excision preventing the interesting junction of the nerves, as well as the production of the numerous delicate filaments supplying the cicatrix of the stump. This has been satisfactorily described by Larrey, in his late valuable work, "*Clinique Chirurgicale*," and also by Descot, in his interesting "*Dissertation sur les Affections Locales des Nerfs*." For the same reasons, the excision of a portion of a nerve must be a more effectual cure than simple division of the same.

If this view of the operative department of the pathology of nerves be found to be correct, it would follow that the division of the infra-orbitary nerve, where it enters the osseous canal in the floor of the orbit, would prove more availing than its division at the infra-orbitary foramen on the cheek. This might be easily accomplished as follows:—let an incision about an inch long, of a curvilinear figure, to correspond with the circular shape of the orbit, be made at the outer canthus of the eye, the centre of which shall be opposite the outer commissure or angle of the eye-lids, or rather the superior margin of the zygoma. This incision is to be deepened by cutting close to the osseous wall of the orbit, until the instrument reach the speno-maxillary fissure, when it is to be laid aside, and a

round-shaped gum lancet inserted in the wound, with its cutting edge at right angles to the floor of the orbit, and the nerve divided as it runs in the osseous channel. In some, this is an open, while in others, it is a shut or entire canal; but, in all, the parietes are so delicate as to be easily cut across. A portion of the infra-orbitary nerve, at its emergence from the infra-orbitary foramen, could not be removed, in consequence of its division into so many minute filaments: neither could this be accomplished within the orbit.

The supra-orbitary or frontal nerve may be also divided within the orbit, nearly an inch from the superciliary ridge, by first ascertaining the superciliary foramen, or notch, which is done by drawing a perpendicular line from the second bicuspid at right angles to the area of the crowns of the teeth; secondly, by making an incision about the fourth of an inch parallel and close to the superciliary ridge at the foramen, through the integuments, orbicularis palpebrarum muscle, and ligament of the superior tarsus; thirdly, substituting for the straight bistoury, or scalpel, a probe-pointed bistoury, which is to be inserted deep in the orbit close to the bone, and with which the nerve is to be divided by cutting upwards on the bone, in the direction from the inner to the outer canthus, carefully guarding against injuring the superior oblique muscle on its inner or mesial aspect. A portion of this nerve may be excised either within or without the orbit: within, as just directed, combined with searching for the nerve at the superciliary foramen, and, after its division, seizing hold of it with the dissecting forceps, and removing the insulated or detached part. As it sends off minute filaments on its emergence from the orbit, the removal of a portion without the cavity would not hold out a prospect of so permanent a cure.

JOHN LIZARS.

Edinburgh, 34, North-Place,  
24th April, 1830.

(*Medico-Chirurgical  
Review.*)

## ANALYSES & NOTICES OF BOOKS.

“ L'Auteur se hâte à allonger ce que le lecteur se tue à abréger.”—D'ALEMBERT.

*An Account of the Varieties in the Arterial System of the Human Body.*  
By P. H. GREEN, A.B. M.B. Trinity College, Dublin; illustrated by plates.

IN Germany, the attention paid to minute anatomy, and to the accurate description of isolated parts of the human body, is quite extraordinary. In this they certainly surpass the anatomical investigators of Great Britain or any other European country; and they deserve, most unquestionably, the highest praise for their industry and perseverance. Tiedemann, for example—what wonderful patience and exactness does he not exhibit in his great work—the plates of the varieties!

In the structure of the human frame nature seems to luxuriate in her wildest and most wayward mood; the same organs cannot be said to be formed exactly alike in any two individuals, but in her arrangement of the sanguiferous system, the variety in which she indulges seems to be almost inexhaustible. Even the great vessels which go off from the heart are seldom uniform; once in every three or four instances there is a striking variety—a deviation from what is usually called the general rule or archetype; and the immediate branches arising from them are apparently susceptible of every modification of position. To give, then, an account of those varieties throughout the body is something like laying down a catalogue of the fixed stars, an excellent and valuable thing in its way for practical purposes, but never pretending by any means to embrace the whole of the subject, or to set it forth in its full extent. It is enough if all those particular varieties, in the case of the vascular system, be detailed, which are in any degree frequent or likely to occur in surgical practice.

The unpretending volume now before us is an attempt to supply certain deficiencies of Tiedemann, so far as the arterial system is concerned; and it is very remarkable how much may be, and has been, effected by an industrious gleaner setting boldly to work in the

same field after the great German labourer. Dr. Green is entitled to a great deal of credit, not only for what he has done, but for the spirit that prompted him to persevere. He has been evidently indefatigable in his researches. Without any parade of exclusive resources or vaunting announcement of discoveries, we have in his book the result of long-continued observation, directed to one portion of the frame, and conducted with ample opportunity in one of the best supplied theatres of dissection in these kingdoms. It ought to vouch sufficiently for the correctness and consequent value of Dr. Green's book, when it is known to have been drawn up under the immediate inspection of the Professor of Anatomy in the University of Dublin. Dr. Macartney, whose museum is, perhaps, more richly stored with varieties of arteries than any other repository on this side of the meridian of Halle, permitted Dr. G. the free and unrestricted use of his cabinet devoted to this object; and when we are further enabled to state, that our author has acted for some years as one of the Professor's Demonstrators of Anatomy, it is needless to dwell longer on an inquiry into what were his means and his qualifications.

The book is not only replete with good matter, but is as cheap as it is moderate in bulk; nor shall we hesitate to recommend it as a most useful manual of reference for the operating surgeon. It were a very superfluous office, we are persuaded, for us to set about describing the advantages of being prepared for those possible occurrences of devious courses of arteries which might present themselves when least expected; whilst at the same time we assert, that there is no excuse for ignorance of the possible existence of such rare cases. By being prepared to expect them, or at least not to be surprised at their occurrence, the actual state of things may be, perhaps, better ascertained, and there is no knowing how much danger may be thus avoided, or what fatalities removed.

The plates, six or seven in number, are pretty well executed, and illustrate chiefly the varieties in the arterial system in the extremities; they are, in fact, confined to this, being intended by the author merely as a supplement to Tiedemann's plates, as published under the superintendence of Dr. Knox, of Edinburgh.

## MEDICAL GAZETTE.

Saturday, July 10, 1830.

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*"Licet omnibus, licet etiam mihi, dignitatem Artis Medicæ tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."*—CICERO.

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### THE NATIONAL CEMETERY—NECESSITY OF A LEGAL ENACTMENT.

SOME symptoms of a proper spirit on this subject, we are glad to perceive, have begun to manifest themselves in the public mind. It is proposed to discountenance and to prevent, as far as possible, all future interments within the city. The object is unquestionably good and laudable—the means, however, by which the managers undertake to put their plans into operation, do not appear to us to be sufficient for the accomplishment of their purpose.

It is extremely curious to consider for how many centuries—aye, ages—such schemes have been in contemplation; whilst in no country have they ever been carried into effect without the aid of legal enactments, attended with all their appropriate and essential sanctions—and even then, perhaps, imperfectly. It was one of the laws of the twelve tables in ancient Rome, to prohibit sepulture within the city; and it required a strong edict from Theodosius (one of the early Christian Emperors) to enforce the same prohibition. "The practice," as the edict expressed it, "was detrimental in the highest degree to the public health; whilst," as it was quaintly added, "the erection of tombs and monuments outside the town might present salutary memorials to the traveller." Other historical evidences might be adduced, were it our wish to swell a short article into an essay, to show that similar provisions were made in the laws of other countries. Yet with all this, people could not be reconciled to the thought



of lying in a grave far from home—they would still fain be among their friends—they congregated, in fact, and kept company, until it became a perfect nuisance. Here, in London, it has of late become more difficult to find room for the dead than for the living: our church-yards are literally so stuffed with bodies in various states of decomposition, that it has been the practice to use borers to ascertain the state of the soil beneath the surface, before a new interment could be permitted; whilst the surface itself has been raised several feet above the original level. In this country, in truth, no decisive step has ever yet been taken to remedy the evil. The accomplished Evelyn complains that after the great fire of London, in 1666, the city was not cleared of its burial places, and a necropolis instituted without the walls. "I yet," says he in his *Sylva*, "cannot but deplore that when that spacious area was a *tabula rasa*, the church-yards had not been banished to the north walls of the city, where a grated inclosure of competent breadth, for a mile in length, might have served for a universal cemetery to all the parishes, distinguished by the like separations, and with ample walks of trees, the walks adorned with monuments, inscriptions, and titles, apt for contemplation and memory of the defunct." This would, indeed, have been a great national work had it been undertaken at that period; but instead of this, the graveyards of the city have grown fat and odious, till they positively stink in the nostrils, and infect the air with pestilence.

Our numerous parish churches and chapels of ease present so many centres of attraction: they encourage and foster that hankering after the vicinity of sacred edifices as the most eligible site for interment, which had its origin in what are usually considered more superstitious times than these. Traditional customs, and old habits and

associations, have perpetuated the practice—we adhere inveterately in this respect to one of the most absurd usages of our ancestors: one of those weak things which every one condemns in theory, while he practically persists in it. It is not difficult to trace the origin of this custom in Christian countries:—the great object was, as is well known, to secure the "mortal coil" from the machinations and disturbance of evil spirits; and what place could better ensure this than the holy precincts of the church? There they accordingly had themselves interred; but in process of time, not content with this degree of proximity, a rivalry of precedence arose—a jealousy of place—an ambition beyond the grave—and at last they succeeded in making their way good into the sacred edifice itself. The rank of the individual when alive was still asserted by him in his tomb—he was still capable of enjoying his privileges, and claimed a nearer right of approach to the altar. The dignitaries and officials of the church, too, inculcated, by their example, the propriety of the proceeding: as if *they* had really any thing to fear, or wanted this protection, none insisted upon their prerogative of inviolate entombment with more holy zeal than these pious ecclesiastics. To the eternal honour of St. Swithin's good sense, however, it is recorded that with the most disinterested humility, or bold defiance of the evil one, he declined being buried within the walls of his own cathedral: it was his wish, it is said, to evince his sense of his own demerits, by permitting his grave to be trampled on by the feet of the profane; and accordingly he who could command the horns of the altar, chose to lie, with humble-minded modesty, beneath the canopy of heaven.

That this same superstitious feeling should still prevail in an age of boast-

ed liberality of sentiment and extensive information, is not a little strange. There cannot perhaps be a stronger instance of what Persius calls "the mother" lurking about men's hearts. It is one of the most amiable of human weaknesses, undoubtedly; but then it is one which leads to pernicious consequences, and cannot be indulged in much longer without being attended by effects the most disastrous. The present state of our public church-yards within the metropolis must be speedily reformed, or it will reform itself with a vengeance. The plague used to be a frequent and well-known visitor of this metropolis. It is, it will be said, a hundred and sixty years or more since its last great visitation; but why have we been happily rid of it so long? Why, the narrow and crowded streets that disgraced the city in those days, and which bred malaria in abundance, with its thousand attendant ills, most providentially were laid low by the fire of sixty-six. London was then rebuilt on an ample and open plan: the "chartered libertine" was suffered to take his fling at large, and the lurking foe was chased from his accustomed haunts. What was a fair allowance of space then, however, has now become, by reason of the multiplied population and the accumulation of the dead, as narrow a limit as the plague itself could wish. What we now breathe is loaded with—

"The volatile corruption from the dead;  
It is not air, but floats a nauseous mass  
Of all obscene, corrupt, offensive things."

Let it be recollected, that the poisonous effluvia arising from our supersaturated church-yards, must be largely reinforced by the annual addition of at least 40,000 bodies—Bunhill-Fields burial-ground alone receiving its 1000 every year—and that every dead body, being diffusible to the extent of twelve-thirtieths, leaves but one-thirtieth part

of fixed matter in the grave, while the rest, sooner or later, is mixed with the air we breathe. It may surely be reasonably presumed, that our bowels have a most extraordinary yearning for our deceased relatives and friends—yea, a most charitable affection for all our defunct neighbours—when we thus delight in taking into our systems, as regularly as our meat and drink, so large a proportion of their mortal remains.

Talk of the Thames water after this!

Now, to remedy this disgusting and dangerous state of things, some praiseworthy individuals have lately proposed to combine their exertions in order to discountenance the practice of thrusting dead bodies under our very noses, for the purpose of putrefaction and decomposition; those individuals are willing to go farther, and to combine their purses to a certain extent, in order to secure a suitable repository outside the city for our mortal exuviae; and with a view, we suppose, to satisfy even the most squeamish and fastidious, to make the place as pretty and romantic as fondest wishes could desire. All this may be very well for a set off; but we will venture to assume that the mass of the population are very well able to understand plain truths, with regard to the danger that threatens them; and that they have some glimmerings in their souls, no matter how small, of nature's first law. What reason, then, can there be, why a reform and a remedy should not be attempted on a more enlarged and enlightened plan? The main evil, the very root of the evil, should be radically removed. *Sepulture within the precincts of the metropolis, and of the cities and towns throughout the kingdom, should be absolutely prohibited by the law of the land.* Measures should be taken on this broad basis at once. The advocates of the new burial project should not be content to dabble on the margin of the

current, in fearful apprehension of being unable, unassisted, to gain the opposite bank. They must plunge in boldly, and be positively more than half way across, before the sluggish spectators will betray a desire to follow them.

But we have a word to say to these gentlemen before we part. They seem, as it appears to us, to forget that their beau ideal of a cemetery—the beautifully situated Père la Chase, is indebted for all its present attractions to an imperial edict; and that it was by positive legal enactments that the church-yards beyond the walls of Paris were provided with their first tenants; and this at a time when that metropolis groaned not more grievously beneath the burden of her dead than London does at present. Still would our sentimental neighbours have persisted in heaping up the mountains of St. Innocent's, and the other town church-yards—raising them perhaps into a Babel pile, offending the heavens with its pestilential breath—had not the wisdom of the consulate, and the early years of the empire, provided against the impending horrors. While we learn from French experience how far such evils may probably go, if left to themselves, and the only effectual method to be adopted for their cure, we should not neglect to profit by the lesson. Let, then, the great object be to procure a legislative enactment. What rational opposition could be presented to a parliamentary bill for the abolition of sepulture within the city, we cannot well conceive; and without this we are persuaded the project will not answer. We observe Lord Lansdowne's name in the list of its patrons—we earnestly recommend our suggestion to his notice.

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#### LONDON UNIVERSITY.

THE meeting of proprietors, which took place last Saturday, led to no other re-

sult than that of leaving matters where they found them. The general impression seems to have been that there were faults on all sides, and that, under such circumstances, their safest plan was to support the Council. The report of the Council intimates a desire, or perhaps we should say gives an admonition to the warden and professors respectively, to live in brotherly love and kindness. Unanimity is strongly recommended, and the necessity of mutual forbearance. Some very strong language was used at the meeting, but Dr. Birkbeck alone was guilty of any personal reflections. As the matter now stands, it appears to us that the accusations against Mr. Pattison are abandoned, and that he has only to remain quietly in his chair and attend to its duties. He cannot be turned out, and of course will not be such a fool as to resign, as he expressly states it to have been the object of those whom he regards as his enemies to drive him to that step. Mr. Bell, as we stated on a former occasion, has already sent in his resignation, assigning grounds for this step altogether different from those on which the recent controversy took place. Has his resignation been accepted, or do the Council mean to comply with his wishes? His name was a tower of strength to the University. Others have threatened to retire, but we suspect they will end in threats. Gentlemen had better take care: from the tone of Mr. Brougham's speech we suspect they will be apt, like Mr. Huskisson, to be taken at their word, and that their resignations, if once tendered, will be held to be "no mistake."

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#### THE LATE KING'S DISEASE.

THE vulgar and stupid abuse which has been poured forth in the *Lancet*, against the medical attendants of his late Majesty, has been brought to a climax by one of the most consummate



pieces of impudence that ever was penned. The writer maintained through a long series of articles that his Majesty's disease was gout. On the 29th of May a case of gout was given as parallel to that of his late Majesty, in which the patient recovered, and this was sarcastically recommended as meriting the attention "even of royal physicians." On the 26th of June (the day of his Majesty's decease) we were told that the puriform discharge from the lungs was thought, "by the best informed," to be the result of a gouty inflammation of the mucous membrane, and a sanatory effort "to prevent some more serious effect of a gouty disposition." But no sooner had the result of a post-mortem examination rendered the fact of disease having existed in the heart undeniable, than we were told that the result demonstrated, in the most unequivocal manner, "the accuracy" of the writer in the *Lancet*, while it was the "condemnation" of his Majesty's medical attendants:—that is, that the existence of a disease *which the writer did not say was present*, shewed that he was correct in attributing the complaint to a cause entirely different,—while it proved that the opinion of the physicians was wrong—against whom it has been the complaint of the writer that they never gave any opinion at all! So much for this specimen of logic and candour.

But we are *now for the first time* told that Mr. Wardrop, who saw the King at the commencement of his last illness, discovered disease of the heart by means of the stethoscope; if so, he had the merit of detecting, with the assistance of that instrument, that which was apparent to every medical man in the kingdom from a mere detail of the symptoms; indeed, the exact seat and nature of the disease were described in this journal *before* his Majesty's decease *not after*

the post-mortem examination—the plan adopted by our prudent contemporary. But if the writer of these articles knew that his Majesty's disease was ossification of the heart, for what purpose was the case of gout ending in recovery adduced? Why does this person even now lead the public to suppose, that "by an effort of nature, or *by the aid of art*," the disease might possibly have been removed? Does he mean to insinuate, that ossification of the heart can be cured? If so, it is his bounden duty to point out the remedies by which this may be effected. If he does not mean to say so, then what are we to understand by the "*aid of art*," and what by the case said to be parallel to that of the King, in which the patient recovered? We regard the whole story as a mere puff of Mr. Wardrop, having as little foundation as the host of libellous charges against others, which have recently appeared in the same publication. Mr. Wardrop will probably think it due to his own reputation publicly to decline the praises which are offered him by the writer in the *Lancet*—the rather as it is openly and positively asserted by those who were about the King, that the alledged circumstance on which they are founded never took place at all.

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#### PUNCTURE OF THE LIMBS IN DROPSY.

THE superiority of puncturing over the more common method of scarification, in order to allow the water to escape in dropsy, was strikingly illustrated in the case of his late majesty. The incisions made by the scarifications are much more apt to inflame; and wherever this occurs the tumefaction and effusion about the edges of the wound blocks it up, and thus prevents the object in view, even if the inflammation itself does not become a source of danger. The method adopted with regard to the late King, and which afforded

so much relief, consisted in making numerous minute punctures, with fine round needles, in the most distended portions of the integuments. From these almost invisible apertures not less than twenty-four pints of water flowed. The means adopted to ascertain the quantity was that of weighing the linens when they were taken off, and again when they were dry; the difference giving the amount of fluid which they had imbibed.

## HOSPITAL REPORTS.

### ST. GEORGE'S HOSPITAL.

*Case of Empyema, for which Paracentesis-Thoracis was performed; but was followed in less than three weeks by Pneumo-Thorax and Death.*

WM. SMITH, æt. 23, a footman, admitted Feb. 10, 1830, under Dr. Hewett.

Pain at the scrobiculus cordis and lower part of left side of chest, aggravated by cough, and by inspiration, which is imperfect, and instantly checked; pain in left shoulder; decubitus on left side; troublesome dry cough; aspect pallid and phthisical; emaciation. Pulse 108, small, not soft; skin cool; night perspirations; tongue loaded and whitish; bowels opened by medicine.

Was in good health till a month ago, when he caught cold; had first cough, and then pain on the left of the xyphoid cartilage. He neglected his complaint for four days, when we saw him, and immediately bled him, with relief; and subsequently ordered a blister. He had salines, with antimony and nitre, mercurial purgatives, &c. under the use of which the pain in the chest and dyspnoea disappeared in a few days, and merely a troublesome dry cough remained. About a fortnight ago this too was almost gone, and another blister was applied, and directed to be kept open. Five days ago he had a relapse, after imprudent exposure to cold, and was attacked with the present symptoms, for which he has done nothing. He says he has not been subject to coughs, nor to spitting of blood, and that there is no phthisis in his family.

We may mention that the stethoscopic and other symptoms clearly indicated pleurisy; but when only a trifling cough remained, *ægophony*, the evidence of effusion, was present in the left side of the chest, and it was on this account alone that we ordered an open blister. It will be seen hereafter how true the evidence of auscultation proved to be.

Hirud. xiv. lat. Postea Emp. Lytt. ampl. ibidem.

II. Salin. c. Tr. Digit. ℥viij. 4tis hor.

11th.—Pulse rather increased in volume. On applying the stethoscope, Dr. Hewett recognised *ægophony*; and on using percussion, a *dull sound*, in the posterior and inferior parts of the left thorax, as high as the inferior angle of the scapula. It was but too evident that effusion into the pleura existed for that extent.

V.S. statim ad ℥viij. vel x. si suff. vires.

Hyd. Sub. Pulv. Ant. aa. gr. ij. Conf.

Ros. q. s. ut ft. pil. 6tis hor. per biduam.

12th.—Pulse 100, soft; relieved by bleeding, but still some pain; blood buffy; bowels relaxed.

Hirud. xvi. lat. sinist. Adde Op. gr. ¼. sing. pil.

13th.—Inspiration still checked by pain; left side inexpandible; pulse 96, very soft; griped.

Hirud. xiv. stat. Pil. Hyd. ℥ss. t. d. P. c.

Omit. Cal. &c.

20th.—Cough, but no pain, on inspiration.

Interm. Pil. Hyd.

H. Sal. c. Tr. Digital. ℥v. 6tis hor. et adde Mag. Sulph. 3j. dos. matul. et merid. si op. sit.

Morph. Acet. gr. ½ in pil. c. Acac. Mucil. omni nocte.

On the 21st he was examined with the stethoscope by Dr. Hewett. The left side was universally dull, and *ægophony* was distinguished about the level of the fourth or fifth rib. Dr. H. also queried—*Pectoriloquy on the right side, below the second and third ribs?*

The effusion had evidently increased considerably on the left side.

He now had fish, with milk, for breakfast and supper; and the pil. sap. c. op. failing to procure sleep, the extractum lactucæ was tried instead of it.

30th.—Ext. Lactuc. gr. xvi. o. n.

Mist. Amygd. ℥ss. Acid. Hydroc. medic. gtt. j. 6tis hor. Om. alia.

On the 8th of April we examined him again. The left side was universally dull on percussion from top to bottom, and from the middle line of the sternum to the spine. The intercostal spaces were on a level with the ribs: and this side now measured an inch more than the opposite. No distinct respiration any where, but *ægophony* over the upper two-thirds anteriorly. The heart pulsed to the right of the sternum. The right side of the chest was generally resonant, the respiration puerile, and voice bronchial. Doubtful pectoriloquy existed under the right

clavicle\*. In our notes we marked the patient's condition as—*abundant empyema in the left pleural cavity; tubercles in the other lung?*

22d.—Lies always on left side or back; pulse 130, small, soft; bowels open twice or three times daily. About 3vj. or viij. of thick muco-purulent matter expectorated in twenty-four hours, without pain; less perspiration at night.

Om. Acid. Hydrocyan. P. c. pil. conii.

On the 6th of May we find that he had been free from any expectoration for several days; but on the 11th it returned, although trifling in quantity, and the same as before in quality. During this time the dimensions of the left side of chest perceptibly diminished, and afforded such a gleam of hope that Dr. Hewett deferred proposing an operation. On the 23d, however, a repetition of the measurement (from the middle dorsal vertebra to the lowest point of the sternum) shewed an excess of 1½ inch in favour of the left side; and the heart was felt, heard, and seen to be pulsating under the right nipple. It was now apparent that nothing short of paracentesis thoracis afforded the most distant chance to the unfortunate patient.\* The question of the existence or non-existence of tubercles presented itself to Dr. Hewett's mind. The aspect was phthisical, and the stethoscopic indications supplied by the right side of the chest, were, to say the least of them, suspicious, for doubtful pectoriloquy existed in the upper lobe of the lung. In opposition to these forbidding circumstances, the patient denied the existence of phthisis in his family, and the sputa had never been tubercular. To this point Dr. H. had directed his most anxious attention, and on no one occasion had he observed in the expectoration so much as presumptive evidence of tubercles. As the leaning of justice is, or should be, towards mercy, so the leaning of the medical man should be towards hope; and after maturely considering the arguments on both sides, Dr. Hewett decided on proposing the operation of paracentesis thoracis to the patient and his colleagues. Neither being hostile to the measure, it was performed by Mr. Brodie on the 26th of May.

Previous to puncturing the chest, a grooved needle was introduced between the sixth and seventh ribs, on a vertical line descending from the axilla, and some thin purulent matter drawn off. Assurance being thus made doubly sure, the operation was completed in the same spot; about four ounces of purulent whey-like fluid permitted to escape, and an elastic tube introduced into the opening, and allowed to remain, its outer extremity

\* The gradual accumulation of the fluid was accurately gauged by the stethoscope: as it mounted higher and higher, the ægophomy mounted pari passu, and the resonance of the upper portions of the chest fled before it.

having been closed with a plug; by the occasional removal of which, the quantity of fluid discharged might be regulated, and the entrance of the atmospheric air prevented by its replacement.

In the course of the night he suffered for a short time from a little pain in the left side, and was prevented from sleeping by frequent cough. Next morning he was free from any untoward symptoms, and about a pint and a half of matter had escaped since the operation.

Haust. Nitri, c. Tr. Hyosciami, gr. j. 6tis hor.

29th.—About sixteen ounces more fluid have been discharged—in all, about forty ounces. Has a little pain and much tenderness on the left side, aggravated by cough, which is troublesome; pulse small, soft, rapid. Respiration, accompanied with mucous rattle, is *distinctly audible anteriorly and superiorly on the left side*. Slight ægophony below the axilla; dull sound still upon percussion. Heart felt, and heard more distinctly on the left side than on the right.

The flexible tube was withdrawn in the night, as it occasioned uneasiness. No more fluid had escaped, and the entrance of air by its sides, where ulceration was beginning, was apprehended. On the 30th the respirations were twenty-eight per minute; pulse 133, very soft, and feeble; tongue rather furred at the base.

The respiration was audible, but distantly, as far as the inferior angle of the scapula; and the dull sound on percussion had disappeared anteriorly and laterally. The heart pulsated in its right situation; one mass of viscid muco-purulent sputa in twenty-four hours.

31.—Cough troublesome; pulse 120, little stronger.

Rep. Pil. Conii. o. n.

White wine whey, beef-tea, and arrow-root.

June 2d.—Vin. Rub. 3viij. ex aquæ quotid.

3d.—Quin. Sulph. gr. iij. Ext. Gentian. q. s. ut ft. pil. 4tis hor. sumen. Fish.

5th.—Has been going on tolerably well since last report, there having been little alteration for better or worse. Pulse 120, soft; cough still troublesome; rather more muco-purulent expectoration. On the 7th the respiration was found to be less distant than before; the sound on percussion was a little clearer, and the left side was now an inch less by measurement than the right. On the 8th, the flame of a taper being applied to the wound was not agitated during respiration—a little serum only oozed out. Four or five ounces of muco-purulent expectoration in the last twenty-four hours. On the 9th aphæ were perceived on the tongue and cheeks.

Mel. boracis. ori.



12th.—The patient complained this morning of having suddenly felt air issue with a gurgling noise out of the orifice, whenever he coughed. Serum, also, oozes out in abundance; and both are most horribly offensive to the smell, blackening the plaister, and having all the characters of sulphuretted hydrogen. The flame of a taper applied to the wound was driven forcibly away on coughing, but not the least drawn inward upon inspiration. Left side of thorax preternaturally resonant.

Next day no respiration was heard on this side; and the metallic tinkling, the pathognomonic sign of pneumo-thorax, was so distinct as to be heard by a great many persons quite unacquainted with auscultation. His mother now stated that a brother of the patient had died of phthisis-pulmonalis.

At 10 A.M. of the 15th the patient died.

#### *Necropsia 12 hor. post-mortem.*

Body much emaciated; left side of the chest resonant, like a drum. Prior to opening the thorax, the nozzle of a pair of bellows was inserted into the trachea, and on inflating the lungs air was propelled from the fistulous opening in the left side.

*Thorax*—About two pints of sero-purulent fluid in the left pleural cavity; this occupied its dependent half; the remainder was occupied by air. Pleura itself, and the costal in particular, extremely vascular and flocculent, lined with false membrane, of varying thickness, and “concretepus;” the greater part was in the neighbourhood of the fistulous opening. The lung was much compressed, its structure grey-coloured, and not yet carnified, and a few miliary tubercles existed in it; at the apex was a vomica, scarcely larger than a Barcelona nut, communicating, by a small round opening, (the edges of which were lined with soft lymph), with the pleural cavity. The vomica again communicated with the superior great division of the left bronchus by means of a ramification, of tolerable size.

Right pleura vascular in parts, and in parts united by adhesions of various dates; no fluid whatever in this side. Its surface both costal, pulmonary, and diaphragmatic, ended with minute, pearl-like, tubercular accretions. Lung itself not collapsing, studded with many soft, common tubercles in its superior lobe, with miliary tubercles in its inferior, but comparatively free from either in its middle lobe. At the apex of the lung several honey-comb vomicæ, of small size, communicating partly with each other.

*Cranium.*—Not examined.

We have few remarks to offer on the foregoing case, but we may say a word or two upon its progress. It was clearly, in its infancy, one of simple pleuritis, and the attack was, to all appearance, subdued; whilst

ægophony, the auscultic mark and sign of effusion, still remained. That this is the ordinary commencement of empyema, we have been able to satisfy ourselves fully. The pleurisy is got under, and the patient appears, to all common observation, convalescent; but the stethoscope, and that alone, discovers deficient respiration, and ægophony, the herald of the malady that threatens to proceed to the destruction of the patient. To revert to the present case, the progress of the effusion was very clearly shewn by the successive auscultic indications; and nothing would have deterred Dr. Hewett from an earlier operation but the state of uncertainty that involved the presence or absence of tubercles. The history and expectoration were in favour of the one—the appearance of the patient and the stethoscope of the other: it was decided in favour of the former, but the latter proved to be the true prophets. To those who profess to find no difficulty in deciding on the existence of tubercles, we have nothing to say; they have either over-weening confidence or preternatural acumen.

Although the operation was performed under circumstances so very disadvantageous, it certainly afforded a temporary relief from suffering, and would probably have prolonged, for some brief weeks or days, the existence of the individual, had not pneumo-thorax supervened. This occurred on the day when the patient felt the gurgling noise in coughing, together with an increase of dyspnœa, and the extrication of the most offensive gas. On the next day, as has been mentioned, the *teintement métallique* was recognized; and Laennec has explicitly remarked, that unless there be a communication between the air in the pleura and the bronchi, this sign is invariably absent\*.

\* If there existed, as probably there did, a small vomica in the apex of the lung prior to, or at the time of the operation, it is easy to conceive that the latter may have been the remote cause of the pneumo-thorax; for the fluid being taken away from the pleura, the lung, long disused to such exertion, was put to the labour of the respiratory function; and where is the wonder that, under such unusual exercise, a vomica near the surface should give way?

#### NOTICES.

We are requested to state that Mr. Midlemore's paper, in our last number but one, entitled “Observations on Malignant Diseases of the Eye,” was merely intended as a continuation of his “Observations on the Anatomy, Physiology, and Diseases of the Crystalline Lens,” published in several recent numbers of the Gazette. The fault of giving it a wrong title was our's.

Φ.—We fear we must answer in the negative; but if he will favour us with his address we will write to him.

W. WILSON, Printer, 57, Skinner-Street, London.

# THE LONDON MEDICAL GAZETTE,

BEING A  
WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

SATURDAY, JULY 10, 1830.

## LECTURES ON SURGERY,

*Delivered at St. Bartholomew's Hospital,*

BY WILLIAM LAWRENCE, F.R.S.

### LECTURE LIX.

*Dislocations continued.—Dislocation of the Radius and Ulna at the Wrist—of the Carpus, Metacarpus, and Fingers—of the Hip—of the Patella—of the Knee-joint—of the Ankle.*

DISLOCATION of the *radius* and *ulna*—that is, displacement of one with respect to the other of these bones, at the inferior or carpal extremity, is very uncommon. The radius and ulna are very loosely connected to each other; the radius has a very free extent of motion, and it probably arises from this looseness of connexion and freedom of motion that they give way under the application of external force, without becoming displaced. It may happen, however, that the radius may be dislocated upon the lower extremity of the ulna, by the hand being carried extensively round in the direction of pronation, and this accident you may detect by the palm being turned towards the round inferior extremity of the ulna, and the unnatural prominence that presents at the inferior and back part of the wrist; or dislocation may take place in the opposite direction, by the hand being carried beyond the natural extent of supination, in which case the ulna slips out of the cavity of the radius, and forms a prominence on the inner and anterior part of the wrist. The accident is characterised by the hand being fixed in a state of pronation or supination, according as either circumstance may have occasioned it, and by the unnatural prominence of the rounded inferior extremity of the ulna, either on the anterior or posterior part of the wrist, as the case may be. The latter of these accidents—that in which the hand is carried extensively into the supine state, is particu-

larly uncommon; but both are very rare. The reduction of this displacement is not difficult. If the forearm be held by one assistant, and the hand by another, and the surgeon employ his finger and thumb so as to separate the bones and press the ulna back into its place, the assistant moving the hand in the direction of supination in the one case, and of pronation in the other, at the same time making extension from the wrist, the bones will go back into their natural situation.

You may have a dislocation, which you may either call a dislocation of the radius upon the ulna, or of the ulna upon the radius; you may have this occurring in connexion with a fracture of the radius near to its carpal extremity, and then the replacement of the bones, the proper apposition of the hand and forearm, and their maintenance in the natural position, become considerably more difficult. Instances have occurred in which the radius has been fractured near its carpal end, where you have also had a compound dislocation of the ulna; the ulna passing out through the integuments, and projecting externally.

#### *Dislocation of the Wrist.*

The joint of the *wrist* is liable to luxation. When a person falls, he naturally stretches out his hand to save himself; the hand, in such a case, comes to the ground with great force, and the whole weight of the body strikes upon the upper extremity of that side. If the hand, then, be placed obliquely with reference to the limb, the radius and ulna will pass off from the corresponding surfaces of the articulations with which they are naturally in contact, either anteriorly or posteriorly, as the fall may be. Thus you may have the bones of the carpus presenting a hard tumor, with a great deformity either on the posterior or on the anterior part of the radius and ulna. Now the deformity of the parts in such a case as this is so distinct, that there can be no difficulty in recognizing the nature of the accident, and the replacement is equally easy. In reducing it, the fore-

arm is to be held firmly, and extension made from the hand, when the parts generally go back into their situation without any trouble. But the mere replacement of the bones does not accomplish all that is necessary in an accident of this kind. There will be extensive laceration of the ligaments, which hold the bones together; there will be considerable laceration of the tendons and fibrous sheaths, of which there are a great number on the posterior and anterior part of the wrist, and thus very considerable inflammation and tumefaction will result, requiring pretty active antiphlogistic treatment.

The wrist-joint may be dislocated outwards and inwards, but not so as to be attended with a complete separation of the articular surfaces. The dislocation of the wrist-joint laterally, is a partial dislocation—a separation of some part only; and that is easily replaced.

#### *Dislocation of the Carpus.*

The bones of the *carpus* can hardly be said to admit of dislocation with respect to each other. The *os magnum*—that is, one of the bones of the second phalanx of the carpus—has a round head, which is received into an articular cavity, formed by the bones of the first phalanx, and there is a certain degree of motion between them in their natural situation. Now it is said that this accident—that is, dislocation of the *os magnum*—has occurred; that it sometimes occurs in females, in whom the ligaments are more soft and yielding. I never saw the accident myself, but Boyer says he has seen several instances of it. When it does occur, the bone can be pushed back into its proper situation, but it does not easily remain there; a degree of prominence remains on the back of the hand; that prominence being more sensible when the wrist is bent.

The joint which is formed between the *os trapezium* and that bone which some anatomists call the first metacarpal bone, and others call the first phalanx, of the thumb, is susceptible of dislocation. The majority of anatomists call this the first metacarpal bone; this accident, therefore, is usually described as the dislocation of the first metacarpal bone upon the *os trapezium*. The only dislocation of this bone that can take place, is *backwards*, when it forms, with its articular end, an unnatural prominence on the back of the thumb; the prominence is so very conspicuous that it is immediately recognized; the nature of the accident cannot be mistaken, and if the thumb be pulled slightly at the same time, making pressure with the fingers on the head of the bone, it will be forced into its place again.

A more common dislocation is that of the second joint of the thumb; that is, of the articulation between its first phalanx

and first metacarpal bone. This, like the former, takes place posteriorly. It is easily reduced in the recent state, by making slight extension of the thumb, and pressure with the fingers on the head of the dislocated bone. In this way the extremity of the first phalanx which has become displaced posteriorly to the first metacarpal bone, is usually brought back. But there seems to be something belonging to the structure of this joint which renders its reduction very difficult after a little time has elapsed. Boyer, for example, mentions that he had found it impossible to reduce this luxation at the expiration of ten days after the accident. The difficulty that has been experienced in reducing this dislocation, has led to the proposal of cutting through the tendons, in order to admit of the replacement. I believe that the best way of accomplishing the reduction is not to depend so much on the extension in the straight direction, as on supporting the inferior end of the bone at the same time that you press very hard with your thumb upon the superior or luxated extremity, pushing that over the extremity of the first metacarpal bone. The difficulty, however, that is experienced in replacing this dislocation after a little time has elapsed from the period of the accident, renders it very advisable that we should pay great attention to accidents occurring to this joint, and endeavour to discover the displacement immediately after it has occurred, at which time the reduction may be accomplished with facility.

#### *Dislocation of the Fingers.*

The joints of the *fingers* admit of luxation. Those of the metacarpal bones and first phalanx may be luxated backwards, but from the nature of the articulation they can hardly be luxated forwards. The luxation is so very obvious that it can hardly be mistaken for any other accident.

#### *Dislocation of the Hip.*

The *thigh-bone* may be dislocated in several directions. It may be carried *upwards and outwards*, so that the head may rest upon the dorsum of the ilium; it may be carried *directly outwards and backwards*, so that the head of the bone may be situated on the sciatic notch; it may be displaced *downwards and inwards*, so that the head may project against the foramen ovale of the pelvis; and it may be dislocated *upwards and forwards*, so that the head shall rest upon the horizontal branch of the *os pubis*, or upon the portion of bone which forms the upper part of the acetabulum. In all these dislocations the capsular ligament surrounding the head and neck of the bone, is necessarily lacerated; the displacement cannot take place without tearing of that ligament; and it is stated that in all of them, excepting the dislocation downwards and forwards, the ligamentum teres



which proceeds from the cavity of the acetabulum to the head of the femur, is also torn. I do not know whether this has been ascertained by dissection to be absolutely the fact in every species of luxation excepting that in which the head of the bone rests upon the foramen ovale: however, the ligamentum teres is attached to the notch in the acetabulum, immediately before the foramen ovale, so that the head of the bone can pass over that attachment without a rupture of the ligament.

The most frequent dislocation of the hip-joint is that which takes place upwards and outwards; in which the head of the bone passes out of the socket and rests upon the external surface of the os innominatum. If we were to regard merely the configuration of the acetabulum, we should suppose this to be the least frequent dislocation, because the edge of the socket is higher and thicker in that direction, and thus seems to oppose a more effectual resistance to any displacement. However, the degree of force which displaces the lower extremity in that direction is greater than any other to which the limb is exposed. When a person, for instance, comes to the ground on his feet in the case of a fall, there is a most violent effect produced; the weight of the body coming on the feet, tends necessarily to throw the bone upwards, thus producing the accident, which is more particularly likely to occur if the thigh-bone be in a state of adduction, as the head will slip out of its place in the way I have mentioned.

When the bone has been displaced in this direction, we find the limb shortened to a greater or less extent, according to the distance to which the head of the thigh-bone has been carried from the socket. The foot is inverted; the foot, leg, and thigh, are all twisted inwards, so that the great-toe of the luxated extremity points perhaps to the back of the foot of the opposite side. The knee is generally a little bent, and the limb is fixed in its new position. At all events the patient cannot, of his own accord, carry the limb, nor can he bear to have it carried, in the direction of extension or of abduction; or, if the limb can be moved a little in the direction of flexion and abduction, such motions are only made with great pain. If the patient be thin, an unnatural tumor can be felt on the back of the os innominatum, produced by the displaced head of the bone; but, inasmuch as the bones are covered here by the glutei muscles, it very frequently happens that you cannot distinguish its head in that situation; neither can you in all cases very clearly ascertain the deficiency in the acetabulum, caused by its displacement. These are points which you might suppose would tend very clearly to elucidate the nature of the accident, but you do not find this generally to be the case.

Shortening, then, of the limb, a rotation inwards of the thigh, leg, and foot, and the fixing of the limb in that attitude—these are the circumstances which characterize luxation of the hip-joint when the head of the bone is situated on the dorsum of the ilium, that is, when the luxation is outwards and upwards.

Perhaps it does not at first view appear clearly why the limb should be rotated inwards, when the head of the thigh-bone is carried outwards upon the dorsum of the ilium. There seems to be no reason why in this case, as in other accidents occurring to the hip-joint, the limb should not be thrown into the position in which the action of the principal muscles would place it. Baron Boyer ascribes this to a cause which probably may be the correct one—namely, the effect produced by the strong anterior portion of the orbicular ligament of the joint, which proceeds from the upper and anterior portion of the acetabulum to the rough line at the root of the two trochanters. When the bone is thrown upwards, this ligament confines the basis of the neck of the bone towards the acetabulum in this situation, and prevents the bone from being twisted outwards, as the rotator muscles would carry it.

In the reduction of this dislocation, it is necessary that you should fix the pelvis, rendering it perfectly immovable, and steady. If you do not do this, the pelvis will move with the thigh when you come to apply extension to the limb, and of course the extension will not draw the head of the bone down to the acetabulum. The first thing, then, is to secure the pelvis as firmly as possible to some fixed point; this is accomplished by placing a folded cloth, of the kind I have already had occasion to describe, round the pelvis, carrying it over the groin of the dislocated side, making the cloth rest principally on the pubes and tuberosity of the ischium. This is to be fastened to the post of a bed, or any firm hold. [The relative situations of the parts were here demonstrated by Mr. Lawrence on the skeleton.] If the patient were lying now before me on his side, supposing this to be a bed, and a cloth were carried round the pelvis, it might be easily fixed to the bed-post, and that would render the pelvis perfectly firm and steady. Then the cloths, or the pulleys, by which the extension is to be effected, are fixed to the lower end of the thigh-bone, just above the condyles, and the extension is to be made in a line exactly opposite to the point at which the pelvis is fixed, the direction in which the extension is carried, being rather higher than the situation of the pelvis, not exactly in a direction with it; because, if you carry it a little higher, the head of the bone will be brought in such a direction as will permit it more easily to slip over the edge of the acetabulum. When the pa-

tient has been thus prepared, the pelvis being fastened on the one side, and the apparatus of extension being fixed above the knee in the other direction, the extension begins; and when the head of the bone is drawn down towards the acetabulum, you have another point to accomplish, which is that of elevating the upper end of the bone, as it advances towards the acetabulum, so as to raise the head of the bone into the socket. That is done with a folded napkin fixed in the bend of the thigh by the surgeon, who lifts it up when he finds the head of the bone has just got to the edge of the socket. There are three points, then, to be attended to in this reduction; namely, the fixing of the pelvis, the extension—which is to be made in a manner calculated to draw the head of the bone down to the acetabulum—and the elevation of the upper end of the bone in such a manner as is best calculated to lift it over the margin of the socket. The reduction of the dislocation is thus in general made very simple. The height of the bony ridge of the acetabulum, and the power of the muscles which surround the joint in all directions, render it necessary in general to employ considerable force in reducing dislocations of the hip joint. I should recommend you, therefore, by no means to attempt this reduction, without having previously weakened the muscular power by a copious bleeding, followed up by tartarized antimony, so as to produce sickness. I should recommend you not to attempt it, without having the power at command which is conferred by the use of pulleys. It is necessary that you should derive all the help which you can from these sources. It is true that the French, in describing reduction of dislocations of the hip-joint, trust for the power of counter-extension merely to the strength of assistants holding the bandage which surrounds the pelvis, and that they also trust entirely to the force which is exerted by assistants in making the extension. It seems to me that this is a much less secure and effectual way of proceeding than our own, and that in many instances it will at least subject the patient to the inconvenience of a repetition of trials before the end can be accomplished, supposing it can be accomplished in this way at all.

When the thigh-bone is dislocated so as to lie on the ischiatic notch, the principles of reduction are essentially the same, except that the extension must be made in a somewhat different direction. In the dislocation of the head of the thigh-bone upon the dorsum of the ilium, the direction of the extension for the purpose of reduction is nearly across the knee of the sound side; but when the head of the bone is situated on the ischiatic notch, the direction of the extending force must be across the lower third of the sound thigh. The limb is more bent with reference to the pelvis, and that makes the difference in the mode of performing this re-

duction. There is also another difficulty in the reduction of this luxation; the ischiatic notch presents an excavation into which the head of the bone is received, and in a manner lodged, so that you have greater difficulty in drawing it out of that notch than in drawing it downwards in the more uniform descent from the dorsum of the ilium.

In the dislocation of the thigh-bone downwards and inwards, the length of the limb is a little increased. The foramen ovale is situated rather below the acetabulum, so that when the head of the thigh-bone rests upon it, you have a slight increase in the length of the limb. The foot and the lower extremity generally are either in the state between inversion and eversion, or perhaps are a little everted—thrown a little into the direction in which the limb is seen in the case of fracture of the neck of the thigh bone. You cannot, however, make any mistake between those two descriptions of accidents, for in the latter the limb is shortened; whereas in the dislocation I am now considering the limb is lengthened. In the case of fracture of the neck of the thigh-bone, you can draw the limb into its proper situation, and it will again pass into its unnatural position; but in the case of luxation, the bone is fixed in its unnatural situation. In reducing this dislocation also, the pelvis must be fixed. The extension may be applied to the lower end of the bone, as in the other species of dislocation; but when the limb has been a little extended, you then find it necessary to direct the superior end of the bone upwards and outwards, so as to lift it over the edge of the acetabulum into the socket; indeed this kind of extension may be performed by applying the force to the upper part of the thigh. Let a broad band be carried round the upper part, just below the bend of the thigh, and extension be made at right angles to this upper portion, then let the surgeon, at the time the extension begins to operate, carry the knee of the dislocated limb across the opposite side further than it was before the operation commenced. I have seen a dislocation of the head of the thigh-bone into the foramen ovale reduced by extension made in that way; in fact, it requires very little extension in the other direction at all. This situation of the bone which I now shew you is that in which it is found, and almost by moving the bone across the other limb, while you have a pretty strong force applied to the upper portion of the bone, you bring it back into its natural position.

When the bone is dislocated upwards, whether the head lie on this broad surface of the os innominatum in front of the acetabulum, or just in front of the upper part of the acetabulum, it makes so very unnatural and so very conspicuous a prominence in the bend of the thigh, that the nature of the accident must be easily detected. It

is, however, mentioned by Sir Astley Cooper that he has met with three instances of this dislocation where it had remained unreduced, in which, no doubt, the nature of the accident had not been detected, and where the limb had remained permanently in the luxated state. I now show you two representations of one of those cases [shewing the plate]: this is the pelvis, with a view of the femur that had been dislocated upwards and forwards; and that is a view of the pelvis with the femur removed, showing the new acetabulum. This is a specimen belonging to the museum, [shewing it] where the dislocation has taken place, not upwards and inwards, but merely upwards—a case of unreduced luxation. It appears singular that any person could see a displacement of the thigh-bone where the head of the bone must rest, as it would do here, directly in the bend of the thigh, forming a large, unnatural prominence, and mistake the nature of the accident; yet such was the fact.

To reduce this dislocation, it is necessary to make the extension in a line a little behind the axis of the body; draw the head of the bone downwards towards the acetabulum, and when the extension has acted a little, in this case as in the others, by means of the napkin under the upper part of the bone you elevate the head, so as to give it a direction towards the acetabulum, when it slips in. I have not seen a dislocation of this kind myself, but there was a case in this hospital a little while ago in which the bone was displaced in one of those directions; I hardly remember under whose care the case was.

Now, with respect to the proportion as to numbers in which these several dislocations occur, Sir Astley Cooper states, that in twenty cases of dislocation of the thigh-bone you may have twelve cases in which the head rests on the dorsum of the ilium, five of dislocation on the ischiatic notch, two of dislocation on the foramen ovale, and one of dislocation upwards; this may, therefore, be about the relative numbers of these several dislocations.

#### *Dislocation of the Patella.*

The patella may be dislocated outwards, so that its articular surface will be against the surface of the external condyle of the femur; or it may be dislocated inwards. Looking at the femur, you will see how much higher the external edge of the trochlea is than the internal, and you would be inclined to think that the patella would much more readily slip over on the inside than on the outside; yet in point of fact dislocation of the patella outwards is much the more common of the two. The dislocation may be incomplete; that is, it may be partially separated from

the two condyles of the femur; or it may go over either of them completely. Many of these dislocations are of so inconsiderable a kind, that some accidental movement of the patient, or some intentional effort, is apt to replace the dislocation before the surgeon arrives; or if the reduction have not taken place, it generally is very easily performed by the surgeon. Extend the leg, and bring the thigh into a complete state of flexion upon the pelvis, so as to relax to the utmost extent the muscles which are inserted into the patella; then, by pushing against the edge of the patella which is furthest from the trochlea, you carry it into its proper place. I have known of no instance in which difficulty has occurred in the reduction of a dislocated patella, but I should observe, that in most instances in which I have become acquainted with the accident, the replacement has been accomplished before I have seen the patient. It is said, however, that a good deal of difficulty takes place in some cases. I hardly see how that can be; but at all events I know of no mode of overcoming it but by relaxing the muscles, which are inserted into the patella, to the utmost possible extent, and then I should think the finger and thumb of the surgeon might be adequate to push the patella into its place, whatever kind of dislocation may have happened. I met, however, with a case in *Rust's Magazine*, a *German Journal*, in which the patella had been dislocated neither outwards nor inwards, but where it had been half turned on its axis, so as to be placed with its two edges one forwards and the other backwards. The inner edge of the patella is described in this case as having rested on the outer edge of the trochlea of the femur, the outer edge being immediately under the skin; the anterior surface was directed inwards and the posterior outwards. The accident occurred to a young hussar, who was riding without stirrups; he had his knee forcibly struck by a soldier in the next rank. The injury was attended with great pain, and he was removed from his horse and taken home. The surgeon who relates this case says that he could not succeed by any force in restoring the patella to its proper situation; he thereupon had recourse to an expedient which one would suppose would have enabled him to replace it; that is, he cut through the extensor tendon, where it is inserted into the patella; but he says that he could not restore the patella to its situation, even after having done this. Unluckily he cut into the joint, which suppurated, and the patient died about eleven months after the occurrence of the accident.

#### *Dislocation of the Knee.*

The articular surface by which the femur is joined to the tibia is so broad, and the



bones are tied together by ligaments of such considerable strength, that dislocation of the knee-joint is an uncommon accident; it may, however, take place. The tibia may be dislocated backwards, which is the most frequent. It may be dislocated forwards; but complete displacement in this direction can hardly take place, although the joint may be dislocated completely backwards. Partial dislocation, also, may take place from one side to the other in either direction, all these accidents being the result of great force, and attended with violent bruising, perhaps laceration, and even fracture of the thigh-bone. All you can do in a case of this kind is, to restore the dislocated bones to their proper position, which is easily accomplished by extension. Place the limb in the straight posture, and adopt all the means that are necessary to prevent the occurrence of inflammation. With this care, accidents which have borne a very serious appearance (for the displacement of a joint like this, independently of any other injury, would be attended with such distortion of the limb as must give it a very serious appearance) have been known to do well, the patient recovering with more or less use of the limb or of the joint.

#### *Dislocation of the Ankle.*

The ankle-joint is much more liable to luxation than the knee-joint, for reasons which are very obvious. The tibia may be dislocated inwards; it may pass off the articular surface of the astragalus, so as to make an unnatural projection on the inside of the foot, the foot being at the same time turned outwards, so that if placed on the ground after this accident, it would rest on the inner edge, the sole of the foot being turned outward in consequence of the accident. This eversion of the sole, the direction of the internal margin of the foot towards the ground, and the unnatural prominence of the ankle by the projection of the lower end of the bone against the integuments, constitute circumstances that must point out the nature of the accident.

The tibia and fibula may be dislocated in the opposite direction, that is, the tibia and fibula may be thrown off the astragalus, so as to project externally—towards the outside, and then the foot is turned in the opposite direction; that is, the sole of the foot is turned inwards, and the outer edge of the foot is directed towards the ground. In this latter accident the tibia is almost always fractured. Most cases also of dislocation of the tibia inwards, are attended with fracture of the fibula a little above the joint; sometimes that portion of the fibula which constitutes the external malleolus, undergoes fracture in the same accident. The reduction in either of these cases is not difficult: the knee must be placed in the

bent position, for this will relax the two ends of the gastrocnemius muscle. The leg must be firmly held by one assistant or more, and the surgeon grasping the anterior part of the foot with the one hand, and the heel with the other, brings the foot forcibly into a state of extension, until it arrives at its right bearing with the leg. The limb must then be laid on its side, the foot supported, and the leg and foot placed on the ordinary kind of splint, which is furnished with a foot-piece; it may be necessary to have a splint furnished with a foot-piece on the other side also, to retain the foot in its situation, and to keep it in its proper bearing with the leg; for the extensive laceration of the ligaments in those cases, renders the recurrence of the dislocation very easy. When you have brought the foot into its proper situation, you have accomplished but a part of your duty: you have to put the foot and leg in such a situation with splints, as will prevent the displacement taking place again.

The tibia and fibula may be dislocated forwards upon the astragalus; may quit the surface of the astragalus altogether, and come forward upon the bones of the foot. The shortening of the anterior part of the foot, which takes place in this accident, and the apparent lengthening of the heel, show pretty clearly the nature of the occurrence. The replacement is easily effected. It sometimes happens that the bones of the leg are luxated forwards partially; they do not entirely quit their proper bearing upon the bones of the foot; the inferior articular surface of the tibia rests partly upon the articular surface of the astragalus, and partly upon the anterior prominence of this bone, and upon the os naviculare in front of it. Now this is an accident which may be easily overlooked, for it does not cause in the first instance any marked deformity of the foot; it is attended with a shortening anteriorly; that is, the distance between the anterior end of the tibia and the toes is shorter than natural, and there is also an unnatural prominence of the tibia upon the dorsum of the foot; there is an unusual distance between the tibia and the heel; the heel is drawn up, and the foot is slightly pointing downwards. When you come to look at the back of the leg, you will see a much greater concavity near the heel than is natural. In the usual state, the tendo-achilles forms nearly a straight line above the heel, but on the occurrence of this accident, you find a concavity instead of a straight line. Now although these circumstances are obvious enough when you are aware of the accident, they are altogether so inconsiderable, and the nature of the accident is so concealed, that they may easily escape the eye immediately after its occurrence. The consequence of this is, that the bones become fixed in their unnatural situa-

tion, considerable deformity ensues, the motions of the foot are restricted, and the heel does not come to the ground, the foot is pointed downwards, and there is very little motion in the ankle-joint. [Mr. Lawrence exhibited a cast taken from a case in which this accident occurred, but was not observed immediately.] You observe here the unnatural prominence of the tibia, and you see the unnatural hollow just above the heel. This pointing of the foot downward, is also very conspicuous. The cast was taken from the patient while in the hospital. The two lateral views which I now show you, are representations of an accident of this kind, in which the bones had not been replaced.

There would be no difficulty in replacing the bones, if the nature of the accident were recognized immediately after its occurrence; and the probability of non-detection of it, in the first instance, should render you very attentive to all the minutæ of accidents occurring about the ankle-joint, where there is any apparent obscurity. It should lead you to be careful (supposing there is no fracture of the tibia or other accident of that kind) that the foot is brought into such a position after its replacement, that you may be able to move it in every direction of which the joint admits. If you do that, of course no subsequent deformity can result. I should mention to you, that this partial luxation forwards is usually attended, as are many of the accidents about this joint, with fracture of the fibula.

Compound luxations of the ankle-joint are not uncommon, and when you recollect that the lower part of the tibia and ankle-joint are merely covered by integuments—when you recollect that this thick bone is pushed off its natural bearing on the astragalus, and comes to be placed between the inner edge of the astragalus and the skin above it, and that the weight of the body must press upon it when thus situated, you will easily conceive how compound dislocations happen. Compound dislocation of the ankle-joint with protrusion on the inside, is by no means uncommon. Sometimes this occurrence is complicated with compound fracture of one of the bones, adding very much to the apparent seriousness of the case, and, of course, to the chance of subsequent stiffness in the joint. Heretofore this was a case that was deemed a proper one for amputation, but of late years we have learned, that if the bones be replaced, if the external wound be united, if the foot be brought into its proper position, if the limb be then placed in splints, on which it is kept motionless, the foot and leg being kept in their proper bearings, and judicious means adopted to obviate the occurrence of the inflammation, which in many cases is the consequence of such an injury, the wound unites, and in some in-

stances the complete use of the joint is regained. When I say that this used to be deemed a case for amputation, I should add, that though this was, I believe, the general practice in accidents of this kind, no doubt it occasionally occurred, that patients would not consent to lose the limb for an accident of this kind, and then the surgeons necessarily made an effort to save it. In some such instances, it happened that the limb was saved, and thus the refusal of the patient led to a knowledge of the fact, that amputation was not always necessary. I myself am acquainted with a gentleman, a member of our own profession, who met with this accident forty or fifty years ago, and who took it into his head that he would not part with the limb. It was represented to him that he must have it amputated, but he would not submit to the operation, and his case did very well notwithstanding. He retained his limb, which enabled him afterwards to lead a very active life in the practice of his profession in the country, and he is now, as you may suppose, very far advanced in years. What, then, should be the treatment in a case of this kind? In addition to the general directions I have given you, you should close the external wound, and take all the pains in your power to put it in a situation the most favourable for union by adhesion or by granulation. Sir A. Cooper particularly recommends in this case, lint dipped in the blood to be laid over the wound, and allowed to dry there so as to form a firm, hard case, under which it very frequently happens that the soft parts unite by adhesion, and the accident is converted into a simple dislocation; or, if this do not take place, a slight suppuration forms, and, after a time, it may be necessary to lift up a little of the lint at one edge, for the purpose of letting out the matter. The application of evaporating lotions to the part, generally tends to prevent the occurrence of suppuration.

Sometimes there is a comminuted fracture of the tibia or fibula, in conjunction with an accident of this kind; but the general remarks I have made to you, with respect to the treatment, will show you the course you ought to follow when this is the case. The comminuted fracture of the tibia, in conjunction with a compound luxation, would not of itself be a reason for amputation. In a person of good constitution, where the laceration of the external parts was not very considerable, where there was no artery of importance wounded, you might still attempt to save the limb. It might be necessary to remove portions of bone, if any were completely detached, afterwards adopting the treatment I have just mentioned.

It becomes a question what ought to be done when the protruded portion of the bone cannot be replaced. Supposing you have a compound luxation of the ankle-joint, with

the tibia projecting, and that you cannot get the bone back again, that it is closely girded by the edges of the wound, you might then, perhaps, enlarge the wound a little. But there are instances, in which you either cannot get the bone replaced, or in which, after replacement, it becomes again luxated. In some of these instances, Sir A. Cooper has strongly recommended sawing off the protruded portion of the tibia. In his work on fractures and dislocations of the joints, he has recounted several instances in which the limb has been saved under these circumstances; the consequence of course being, that the use of the limb was in a considerable degree impaired. But still the limb was saved in a state which was considered preferable, probably, both by the patient and the surgeon, to a wooden leg. At all events, these cases show that the limb may occasionally be preserved; and this suggestion respecting sawing off the projecting portion of the tibia may be extended to other instances, in which the protruding bone cannot be replaced.

#### *Dislocation of the Foot.*

There are some instances, in which the astragalus has become dislocated, and in which it has become so completely displaced, that the surgeon has removed it, dissected it out, and then placed the foot as nearly as possible in the natural situation; such cases have done tolerably well. There is a singular instance related by M. Boyer, in which it appears that the astragalus had been completely separated from all its surrounding attachments. It was in the case of a luxation, where, after a time, the separated astragalus protruded on the inside of the foot. The integuments became red, swelled, and ulcerated, and, in fact, the bone made its way out. Here is a representation of the case, [shewing it]. The astragalus came out.

The other bones of the tarsus do not admit of dislocation with relation to each other; and, I believe, we hardly know an instance of dislocation of the toes.

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### LECTURE LX.

*Diseases of the Joints—White Swelling—Inflammation of the Synovial Membrane—Hydrops Articulæ—Chronic thickening of the Synovial Membrane—Ulceration of the Articular Cartilages—Morbus Coararius.*

You have seen, gentlemen, that the joints undergo inflammation in consequence of injury, and that they possess the power of repairing the effects of such injury. They are also liable to various forms of disease. The joints are composed of parts dissimilar in their structure; that is, they are made up of bone, cartilage, synovial membrane, and

ligament. Now each of these component parts is subject to particular diseases. Disease may commence in one of them; but they are so closely connected together in the formation of the joints, that when disease begins in one of them, it very soon extends to the rest. It not only extends to the parts that compose the joint, but also to the external soft parts which immediately surround it; so that although the disease at its origin may have been confined to one of the structures entering into the composition of a joint, yet, after some time, it generally involves the whole of the articulation.

The joints are liable to inflammatory attacks, both of an acute and of a chronic description, perhaps more frequently to the latter than the former: in most of these last there is enlargement of the affected part, which, nevertheless, retains its natural colour and appearance; hence the swellings that are thus produced have been called, in common language, *white swellings*; a name given to various affections of the joints in which there is enlargement, without alteration of the natural colour of the part; and the term white swelling merely denotes these circumstances—*increase of bulk, without change of colour.* The French name these swellings *tumeur blanche*, which is perfectly analogous to the English term white swelling; they have sometimes also been called *spina ventosa*, a term to which I have already had occasion to allude: it has no definite meaning, and originally, I believe, was not applied to white swelling of the joints. The term white swelling is one which cannot be very properly retained, because it embraces various affections of the joints, differing considerably from each other, particularly with respect to the structure which is primarily affected.

#### *Inflammation of the Synovial Membrane.*

The synovial membrane is frequently the seat of inflammation. This, in certain points, is analogous in structure to the serous membranes of the body: it has a smooth, polished, internal surface, which facilitates the motions of the joint, from which a fluid secretion takes place; and by means of which the articular ends of the bones are lubricated, and enabled to move upon each other with great facility. The synovial membranes are also analogous to the serous membranes in this circumstance, that they both form complete cavities, having no external outlets. But the analogy between the two descriptions of membrane does not hold good with respect to disease. The serous membranes are particularly liable to that form of inflammation which has been called adhesive, in the progress of which coagulating lymph is effused, constituting preternatural adhesions in the cavity. The inflammation of synovial membranes, on the contrary, is more analogous



to the mucous membranes of the body, which are characterized, not by the lymph which they effuse when inflamed, but by an increased quantity, and alteration in quality of the fluid, that they naturally exhale. The circumstances, therefore, which particularly characterize inflammation of the synovial membrane, are, increased quantity of the synovial secretion, and enlargement of the joint, in consequence of the increased exhalation of the synovial fluid distending its cavity.

Inflammation of the synovial membrane is produced by direct causes, such as a bruise, a blow upon the joint, or by that kind of injury which is termed a sprain; and it very frequently occurs in persons of a rheumatic constitution, by those causes which are capable of producing the various rheumatic affections, that is, by exposure to cold and damp; and it is not uncommonly produced in individuals of a similar constitution, in conjunction with, or in succession to other forms of rheumatic affection, in consequence of gonorrhœa.

The symptoms of inflammation of the synovial membrane are, in the first place, stiffness of the affected joint. I may mention to you that the knee-joint (which is one of the largest articulations of the body, is situated nearest to the surface, and is the most exposed to external influence) is that in which inflammation of the synovial membrane is most frequently observed. We find then that the patient in the first instance experiences a degree of stiffness in moving the joint: he soon perceives that the joint is puffed or swelled, and he finds it hotter than natural; it is felt to be warmer than the corresponding joint on the other side, and upon examination the hand of the surgeon detects an increase of heat. Stiffness then, or imperfection of motion, swelling, and some increase of heat, are the symptoms which, in the first instance, denote inflammation of the synovial membrane. When we come to examine the swelling, we find that it is soft, and that we can detect fluctuation in the tumor. We ascertain by examination that the tumefaction arises from the effusion of fluid into the cavity of the joint. If we place the two hands upon the sides of the joint, particularly towards its upper part, we find we can press the fluid which produces the enlargement of the joint from one side to the other; and if we make pressure with one hand on the upper part of the joint, putting the other hand on the lower part, we can distinguish fluctuation—we can ascertain that the cause of the tumor is not any general effusion, but that it arises from the increase of fluid in the articular cavity. With respect to the fluctuation, however, we perceive that cases of this kind differ materially. In some instances, the tumefaction of the joint is quite soft, and we can very easily detect the presence of fluid; we can move it from one part

to another; by pressing on the tumor above, we elevate the patella from its situation, actually lift it up from the trochlea of the femur, and then, by pressing, can push it down again into a sort of cavity. Sometimes the swelling feels much harder, and there are some cases, where the inflammation is violent and has proceeded rapidly, in which the swelling is so firm as to afford all the characters of a solid tumefaction to the hand. I have seen cases in which the tension produced by the large quantity of fluid, has quite deceived me, and has presented all the characters of a solid tumor. However, on cautiously examining these cases, more particularly if the knee is put as much as possible into the extended state, so as to relax the extensor muscles, you will be able to detect the fluctuation of the tumor, although at first it may give you the impression that it is solid.

After a short time, the inflammation of the synovial membrane abates; the fluid that has been effused into the joint is absorbed; the swelling lessens, and ultimately entirely disappears; so that the joint is left with all its former freedom of motion; the complaint thus coming to a natural termination. In other instances the effused fluid is partially absorbed, the swelling of the joint is consequently diminished, but does not go down entirely; a degree of thickening is left, some stiffness remains, and the patient finds that he cannot use the part by any means so freely as before. In some instances the complaint assumes quite a chronic character. The joint remains distended with fluid for several weeks, or even months, sometimes a little more, sometimes a little less, but remaining considerably enlarged during the whole time, and that enlargement obviously owing to the presence of a fluid, the fluctuation of which can be ascertained by the hand. There are some instances in which, after the distention from fluid, absorption takes place—the joint recovers its natural size; but in a short time the effusion is reproduced, and successive attacks take place for a considerable length of time.

I remember an instance of a patient in the hospital under my care; he was twenty or thirty years of age, was in the hospital from August to November, and experienced about ten attacks of inflammation of the synovial membrane of the knee; they came on about once in ten days or a fortnight, producing considerable effusion and enlargement—lasted about three or four days, went off, and then the joint recovered its natural size. You will not be surprised at finding such a recurrence of this affection, when you know that in so many instances it is to be regarded as a rheumatic affection; that is, as a local affection resulting from a certain diseased state of the constitution.

The treatment of inflammation of the syno-

vial membrane is very simple ; it consists in rest of the affected joint, and in the general employment of the antiphlogistic plan. You must take blood from the affected part by cupping, or by leeches ; perhaps in the first place by the former, and subsequently by the latter ;—and this loss of blood must be repeated according to the necessities of the case. You then apply cold lotions to the affected joint ;—sometimes you are obliged to change these for fomentations and poultices ; adopting at the same time such other treatment, with respect to the use of purgative medicines and diet, as are suitable. In cases of a rheumatic disposition you may employ colchicum, or, at all events, combine the vinum colchici with the aperient medicines. The antiphlogistic treatment very quickly puts an end to all the inflammatory symptoms ; it removes the pain and heat, diminishes the swelling, and enables the patient to move the limb more easily, though the joint remains distended by synovial fluid ; the effusion is not completely removed under the antiphlogistic plan, and we are obliged to have recourse afterwards to counter-irritation. The most effective mode of applying this, is by the use of blisters. You may apply a blister of a good size in the shape of a horse-shoe, above the patella, the concavity of the horse-shoe being left for the situation of that bone ; or a blister may be applied first on one and then on the other side of the knee-joint. Friction of the knee-joint, by stimulating liniments, is perhaps a rather less effective mode of accomplishing the same end. You may use the common stimulating liniment—*linimentum camphoræ compositum*—or that liniment combined with *liquor ammoniæ*, or *tinctura lyttæ*. An ounce and a half of olive oil and half an ounce of sulphuric acid, mixed together, are recommended by Mr. Brodie as an embrocation. The tartrate of antimony has also been used as an external friction. The tincture of iodine has been recommended for the same purpose, combined with the *linimentum saponis*, in the proportion of a drachm of the former to an ounce of the latter. In cases in which some degree of thickening in the parts remains, with more or less stiffness of the joint, after the employment of the means I have mentioned, considerable benefit is derived from the application of a roller to the joint externally ; or by surrounding the joint with strips of plaister, (common soap plaister, or the *emplastrum plumbi*,) and applying a common roller over that. Such cases may be benefitted also, in some degree, by the plan of dry rubbing, by friction with the hand—using perhaps a little flour, or something of that kind, just to protect the external parts from the immediate effects of the friction.

It sometimes happens that the joint remains permanently distended with fluid, in consequence of an increased secretion from

the synovial membrane. In this state of the joint, where there is no longer any trace of active inflammation—where there is no heat, no redness, and not much stiffness, but in which the joint is permanently enlarged by the effusion—the disease is called *hydrops articuli*, or dropsy of the joint. In such instances we have, in the first place, to ascertain whether or not there are any remains of inflammation, and to remove them if they exist. If there be none, we must adopt counter-irritation, friction, pressure on the part by strips of plaister, bandages, &c. as I have already described. In instances of effusion into the joint where it has been neglected and much distended for a considerable length of time, some difficulty is experienced in removing the enlargement, and I have seen patients who have had this distention for many years, but who could nevertheless use the affected limb tolerably well. I have not always succeeded, in the cases, in getting rid of the fluid and of restoring the joint to its natural size.

The synovial membrane is liable to a change of structure, in which it becomes very considerably thickened. This, which in its natural state is a very thin, flaccid, and semi-transparent membrane, acquires the thickness of half or three-quarters of an inch, and becomes of a tolerably firm, fibrous structure ; and is of a pale, brownish-red colour on its articular surface. The affection commences slowly, and is incidental to the adult. It begins, in the first instance, with more or less pain and stiffness in the joint, which very soon after is found to be enlarged, and gradually augments in size. On examining the swelling in these cases, it is found to be elastic to the touch—not like the tumefaction of the synovial membrane arising from the effusion of fluid into the joint, but it is soft and rather elastic. The pain in these cases is considerable. If the patient persist in using the joint in spite of the stiffness and pain, very considerable uneasiness is experienced ; and if the limb be much employed—and if the affection have lasted for some weeks, or for some months—suppuration in many cases takes place in some part of the thickened membrane, which discharges itself externally, the opening generally remaining fistulous. Similar formations of matter take place in other parts, and thus you have at last fistulous openings in various parts of the joint.

The constitution suffers while these processes are going on. The patient (more particularly when the stage of suppuration arrives) loses his appetite, his rest and his flesh ; the state which is usually termed hectic supervenes ; and if the affection be not effectually put a stop to by amputation, the patient most probably sinks under the disease.

When the joint has been amputated, it is found, perhaps, on cutting into the cavity,

that there is matter to some extent within it, and that the synovial membrane is converted into the texture I have just mentioned. The surface of the membrane, towards the joint, presents a pale reddish-brown colour, and is unequally granulated and irregular. When we come to make sections through it, the thickness which I have just mentioned is discovered, and the structure is found to be pulpy; but on cutting through it, and looking at the surface, there is observed more or less of the appearance of absorption, in connexion with this change of structure. Now this is not confined to that part of the synovial membrane which forms the bag of the articulation: we find, in many instances, that it extends to the reflected part of the synovial membrane; and that the thin and almost imaginary portion of the membrane which covers the articular cartilages of the joint is thickened, so that a considerable part of the cartilage seems quite hidden by a kind of red flesh growing over it. The ligaments, perhaps, are free from disease, and so, perhaps, are the cartilages; at all events, if either are affected it will be the cartilages, which may have undergone partial ulceration and absorption.

The ordinary plans of treatment seem to possess very little efficacy in this peculiar state of degeneration of the structure of the synovial membrane. Mild antiphlogistic means may occasionally produce some benefit, by alleviating particular symptoms, and there may be occasional inflammations, which the local loss of blood will remove;—in the formation of matter also, you may derive advantage from fomentations or poultices—and rest, of course, as in all other affections of the joints, is advantageous; but none of these measures have the power of arresting the progress of the affection, and counter-irritation seems also to fail. It is observed by Mr. Brodie, to whom we are indebted for first pointing out this particular affection, that the change in question proceeds regularly—goes from bad to worse; terminating ultimately in those repeated formations of abscesses about the joint which excite hectic fever; and that the affection proceeds regularly in this way, unless it be arrested by the removal of the affected part. He seems to be of opinion that medical treatment has no power whatever in arresting this particular change. I do not know whether the experience we at present possess is quite sufficient to authorize this conclusion—quite sufficient to make us acquiesce in the assertion, that we have no power whatever over this particular affection; but, certainly, as far as my own observations have gone, in the cases which I have seen, the progress of the disease has accorded very much with what Mr. Brodie has described. I have been led, therefore, to suppose that, in most instances, the modes of

treatment which may be employed with advantage in other affections of the joints, possess very little power over this; the necessity ultimately arising to perform amputation.

#### *Ulceration of the Articular Cartilages.*

The cartilages covering the articular ends of the bones are very liable to ulcerate; and this ulceration will take place under various circumstances. I have known it occur in consequence of acute inflammation affecting the interior of a joint, and removing the cartilages covering the bones within the space of two or three days. In a case of phlebitis (inflammation of the vein taking place after venesection) that came under my care in this hospital, the patient had pain in his knee-joint, commencing on the 4th;—he died on the 8th day of the same month; and on examination after death, I found the knee-joint filled with pus of a reddish colour—that is, with pus tinged red by the admixture of blood. The synovial membrane which had produced this pus was highly inflamed, but the articular cartilage of the femur, and the corresponding articular cartilage of the tibia, were completely destroyed; and this high degree of ulceration had been produced within the short period I have mentioned.

When necrosis attacks the shaft of a long bone, though it does not involve the articular extremities, yet the inflammatory action which produces the mortification extends sufficiently to the extremities to excite inflammation and absorption of the cartilages, although the synovial membrane does not become involved. Here [presenting a specimen] is a case in which the whole shaft of the thigh-bone has perished, and the cartilages have been completely removed, almost as if they had been cut out with a knife. In the case of penetrating wounds of a joint, where inflammation arises in the interior of the joint, and where the synovial membrane becomes inflamed, we find the cartilages—probably in consequence of inflammation—undergo absorption. Here is, for instance [shewing it], the astragalus, one of the articular surfaces of which is covered with cartilage, while the other is bare. This is the surface corresponding with the articular surface of the tibia, in which the bone is seen as completely denuded as if the cartilage had been dissolved or removed by some mechanical means in the most perfect manner.

Ulceration of the cartilages, then, not only takes place under the various circumstances I have mentioned, but it may begin as an original affection of the joints. Without any disease of the synovial membrane—without the occurrence of any accident or injury to a joint—it may commence as the primary or original affection. The ulceration of the cartilages is attended with two circumstances, which are very different from what



we observe in ulceration of other structures. There is no formation of pus, nor do we ever find granulations produced from diseased cartilages—there is no attempt at reproduction of the cartilaginous structure. Although ulceration of the cartilages may be in the first instance limited to the cartilaginous structure itself, yet it soon involves other parts of the joint. It extends, in the first place, to the bony articular extremities, which thus become ulcerated, and are, in common language, rendered carious; the synovial membrane and external soft parts about the joint become inflamed; small abscesses form and break externally; a succession of these inflammations takes place in various parts of the joint, and thus a number of fistulous openings are established about the joint, giving exit to matter, and leading, in many cases, to carious portions of bone. The ulcerative process often extends to the ligaments that connect the articulations; the consequence of which is that the bones are no longer retained in their relative positions, but are thrown into certain unnatural situations, by the action of the strong muscles of the limb. When the knee-joint, for instance, is the seat of this affection, the tibia and fibula may be drawn from the condyles of the femur towards the ham, forming what is called a consecutive dislocation. When the hip-joint is attacked, the head of the femur is drawn out from the socket upon the dorsum of the ilium, and a shortening of the thigh takes place. When seated in the joint of the occiput, (the atlas, and the second vertebra of the neck,) it leads to those luxations in the neck which I have already had occasion to mention.

Ulceration in the cartilages of a joint is indicated, in the first instance, by pain in the part; this at first is slight, but soon becomes severe, and increased by motion of the part. You will easily believe this to be the case, when you reflect that the surfaces which move upon one another, instead of being perfectly smooth and insensible, as in their natural state, are rendered rough, and perhaps preternaturally sensible. Motion of the joint, in this case, is therefore excessively painful. Pain, then, in the joint, and its aggravation by motion, are the two symptoms which, in the first place—without any increase of size, or swelling—characterize the complaint. In consequence of the communication of the disease to the external soft parts, the joint subsequently becomes enlarged. In the advanced stage of this affection, when suppuration has occurred, and abscesses have formed in various directions, communicating with carious portions of the bones, the constitution of the patient of course suffers; in fact, a hectic condition of the system comes on, and if the disease be not arrested, or the joint removed—supposing we have no power to stop the affec-

tion—the patient will sink under the irritation.

In consequence, however, of our remedial means, the disease in the joint is sometimes stopped; the progress of ulceration, or caries in the bones, is arrested—granulations arise from the ulcerated parts, and inosculate with those on the opposite surfaces—ankylosis ensues, and, ultimately, bony union may be formed between the articulations; and the patient then recovers, with loss of motion in the part—with a stiff or ankylosed joint. In other instances the affection proceeds, the caries extends, inflammation goes on, external suppurations are renewed from time to time, the consequent constitutional irritation wears out the patient, and death at last concludes the scene.

Ulceration of the cartilages of joints is chiefly incidental to young subjects; the great majority of cases are seen in individuals below the age of thirty, after which period it is comparatively rare to meet with the disease; not, however, that patients after that time of life are entirely exempt from the occurrence of this affection.

#### *Morbus Coxarius.*

I have had occasion to mention to you, that the knee-joint is especially subject to inflammation of the synovial membrane; and I have now to observe that the hip-joint is especially subject to ulceration of the cartilages. We may occasionally have ulceration of the knee-joint, and indeed it is not very uncommon there, and probably inflammation of the synovial membrane may occur in the hip-joint; it is difficult, however, to recognize it, for the situation of the joint prevents us from observing those symptoms which should characterize the affection; and I think we need have very little hesitation in asserting that, in the great majority of instances what we call in common language *hip-disease*, and which is technically called *morbus coxarius*, is originally ulceration of the cartilages of the hip-joint. The great majority of these cases certainly occur in children: where you see one case of disease of the hip-joint after the period of puberty, you will, I should think, see forty or fifty taking place before it.

Disease of the hip-joint shews itself, in the first place, by stiffness—imperfection in the movements of the articulation. The child is probably observed by its parents to limp, or not to support itself well on one side of the body. In many cases no very great pain is experienced by the child. At this time, perhaps, the imperfect movement of the limb has been observed by the parents without the child having complained. If, however, the child is induced to move the limb—and parents frequently do this, under the impression that exercise must be advantageous—considerable pain is experienced. On examining the hip—for in such cases our first

attention is naturally directed to the discovery of the affected part—we lay the child on a bed, take the limb in one hand, and endeavour to move the joint. We sometimes find that the knee can be moved towards the abdomen, and that we can bend and extend it with considerable freedom; yet, upon accurate examination, we shall find that there is very little motion of the hip-joint, but that the hip-joint and pelvis move together, and that the child possesses considerable power of moving the pelvis on the vertebral column; if, therefore, you are not very particular to observe whether the pelvis moves with the hip, you may form an erroneous opinion on the subject. Pain is experienced by pressure on the external surface of the hip-joint, when in the extended state. If you press the trochanter inwards, or if you press the lower extremity against the acetabulum, by putting one hand upon the knee, or, with the knee and leg extended, if you press against the sole of the foot, pain will be excited in the hip-joint. At this period very considerable pain is often felt in the knee; and patients complain of that part, saying they feel little or no pain in the hip-joint. Now this affection of the knee is altogether sympathetic, and on making pressure there you will find that no pain is excited; that there is perfect motion, and no disease whatever existing in the joint: thus you may be assured that the loud complaints of the patient, as referred to the knee, are occasioned simply by a sympathetic sensation. The thigh and lower extremity altogether, when compared with those of the opposite side, are usually found diminished in size. The cause of this is, that the patient has not used the limb freely, and that muscles, when not employed, always shrink, and thus a loss of substance is observed in the affected limb.

A remarkable circumstance in the affection of the hip-joint is the alteration in the length of the limb which occurs at various periods of the complaint—alterations in its length as compared with that of the opposite sound extremity. In the earlier period of the disease we sometimes find the affected limb longer than that on the sound side, and sometimes we find it shorter; in a more advanced period of the affection we find it considerably shortened. Now, the lengthening or shortening in the early period is only apparent; whereas, the shortening in the subsequent stage is real. In the former it depends on the position of the pelvis; hence when the lower extremity of the affected side appears longer than that of the other, we shall find that the anterior superior spine of the ilium on that side is just as much lower than its fellow; if the extremity of the sound side appear to be the longest, we shall find that the anterior superior spine of the ilium of that side is lower down than that of the

affected side. When a patient has this disease of the hip-joint, the weight of the body is not supported on both hips, but on that of the sound side; so that when the patient stands erect, the sound thigh sustains the weight of the trunk, and the diseased lower extremity is placed in front of the sound one, the knee being a little bent, and the anterior part only of the foot brought to the ground. Under these circumstances the pelvis, generally speaking, sinks a little towards the diseased limb, and this is compensated by the limb being bent a little towards the opposite side. A degree of curvature of the spine is thus not unusual in affections of the hip-joint. In other instances, however, the patient bends the knee slightly on the affected side when he rests the foot on the ground; and this will be attended with an apparent shortening of the extremity. In order, then, to form a correct judgment, you must strip the patient, and make the examination on a straight horizontal surface. You will then immediately observe the position of the pelvis, and discover the cause of the apparent elongation or shortening of the affected limb. At all events, you may remove every doubt as to the apparent or real shortening or elongation, by measuring on each side from the anterior superior spine of the ilium to the patella: this will enable you to ascertain whether there is a real, or only an apparent alteration in the length. The change, however, in the subsequent period of the affection, is quite a different matter. The disease, as it proceeds, is attended with destruction of the ligamentum teres, with ulcerative destruction of the orbicular ligament of the hip joint, with destruction and ulceration of the head of the thigh-bone, and margins of the acetabulum. Thus all the causes which would prevent the muscles from retracting the limb are removed; the muscles, therefore, draw the extremity upwards and outwards, and produce a real shortening, to the extent of some inches, as the consequence. Here is a specimen [shewing it] in which the head and neck of the thigh-bone are removed by absorption—they are quite gone, the acetabulum also being very much changed by the ulcerative process. Here is another head of a thigh-bone, where the upper part was separated from the rest of the bone, and found loose in the cavity of the joint. This, again, is a specimen of affection of the hip-joint, where the bone has been luxated in consequence of disease; although the head is entire, yet the cartilage is destroyed by ulceration.

You will immediately perceive, then, that these changes must be attended with considerable shortening of the limb. If the disease be brought to a termination, if it end either naturally or in consequence of the treatment adopted; the upper extremity of the thigh-bone becomes ankylosed to the upper

and outer part of the os innominatum; the limb remains permanently retracted and shortened; the motion of the joint, and the joint itself is, in fact, destroyed; ankylosis takes place, and the movements of the hip are lost.

With respect to the treatment of ulceration of the cartilages of joints, I should say that this perhaps is one of the cases comprehended by some writers under the name of white swelling, in which the plan of counter-irritation is applicable. In the commencement there are symptoms and states of the joint in which moderate antiphlogistic treatment will be advantageous,—the abstraction of blood by leeches, or, perhaps, in some cases, by cupping, and the application of fomentations and poultices, and other suitable means. You will understand that in all cases where the joints are diseased, rest is to be observed; this is a most essential point in the treatment. Then after all that is possible in this way has been accomplished, our great reliance must be on counter-irritation; and in this respect our treatment at present seems to be just the same as it was in the days of Hippocrates, for he says with respect to this very disease, that patients who are the subjects of it become lame unless they are cauterized; that is, unless the hot iron is applied to them—for that was the mode in which counter-irritation was employed in his time, and it is the mode which some modern surgeons conceive to be the best, although it has fallen very much into disuse in this country. Our choice of means lies between the caustic issue, from which a discharge may be kept up by means of peas or beads, and rubbing the surface occasionally with fused potash or caustic—the application of moxa, which is a kind of actual cautery, setons, or the actual cautery itself with the hot iron. The actual cautery is very strongly recommended in hip-diseases and other affections of that sort by Professor Rust, of Berlin, who has written a work on diseases of the joints, and who considers the application of the hot iron as preferable to, and more efficacious than, the other means of employing the same principle.

In disease of such joints as admit of amputation, in cases where the malady cannot be arrested by the plan of treatment I have just mentioned, where the progress of caries goes on in the bones, where you have repeated inflammations and suppurations of the external soft parts, where the constitution is suffering severely from the irritation produced by the local injury, where the appetite of the patient is lost, where his rest is disturbed, and where he is losing flesh every day,—under such circumstances it is necessary, if the situation of the complaint admit of it, to remove the joint, in order to save the life of the patient. Such cases are very proper for amputation; but I

may observe that where diseases of the joints are carefully treated, more particularly where proper and judicious treatment is employed in the early stages of the affection, the necessity for amputation very seldom occurs; and I cannot help observing, with considerable satisfaction, that I think in this respect surgery has of late years made great progress. Comparing the operations now performed in the London hospitals, with what were performed at the time I first attended them, I certainly do observe a very great diminution in the number. I should think that in this hospital there is not more than one amputation performed in cases of this kind, where within the time of which I have a perfect recollection, there used to be eight or ten.

#### LECTURE LXI.

*Diseases of the Joints concluded—Blisters—Scrofulous Inflammation of the Articular Extremities of the Bones—General Treatment—Mr. Scott's Method—Loose Cartilages in the Joints.*

#### NERVOUS SYSTEM—*Injuries of the Head—Fractures of the Skull.*

WHEN I enumerated to you, gentlemen, in my last lecture, the various surgical means which we employ to establish counter-irritation in cases of those diseases of the joints which commence by ulceration of the articular cartilages, I believe I omitted to mention the plan of blistering the skin over the joint, and maintaining a discharge from the blistered surface by the application of irritating dressings, particularly ceratum Sabinæ. I consider this, however, not so advantageous, generally speaking, as the other modes of counter-irritation. The attempt to keep up a regular discharge from the surface of the skin which has been blistered by means of the application of savine ointment, is attended with very great local irritation; and this often seems to act as seriously in disturbing the health of the patient as the disease itself for the relief of which that mode of treatment is instituted. It is a plan that has been very much followed in this country, in consequence of having been strongly recommended by a surgeon who wrote on the subject, and asserted its excellency,—I mean the late Mr. Crowther. But latterly it has been much superseded by other modes of counter-irritation, and advantageously so: without, therefore, saying that it is not to be employed under any circumstances, I do not consider it as a plan that is eligible generally.

I mentioned to you, that in the treatment of these affections it is important that the diseased joint should be kept at rest: this circumstance alone often contributes very



materially to the comfort of the patient; and, together with attention to the general health, seems, without local means of an irritating character, in many cases sufficient for effecting the cure. Now, you cannot always keep a joint at rest by merely enjoining the patient to keep it quiet;—it is frequently necessary to employ mechanical means for that purpose: you may, therefore, place on each side the knee-joint, for example, a wooden or a tin splint, adapted to the form of the limb, carrying it above the joint and below it, capable of being fixed to the sound parts. In that way, or in some other mode, it will be advantageous for you, in the treatment of diseased joints generally, whatever may be the nature of the original affection, to keep the part absolutely at rest, so as not to allow the smallest degree of motion of those surfaces that are in a state of disease.

The diseases of joints often begin in the articular extremities of the bones which compose them. They have their origin in scrofulous inflammation, affecting the articular ends of the bones. This, like other forms of scrofulous disease, is most incidental to young subjects, and is generally observed in children; or, at all events, it is most usual under the age of puberty. Persons who have passed that period, and even those arrived at the middle of life, are not absolutely exempt from such affections; but in the great majority of instances they are found in the young; and, in this respect, diseases of the joints dependent upon scrofulous affections of the bones, are similar to those which have their origin in ulceration of the cartilages, and which are also most frequent in young subjects.

Scrofulous inflammation, then, commences in the articular extremities of the bones. Its existence is shewn by a dull aching pain occurring in the bone,—a pain which the patient refers rather to the end of the bone than to the joint itself, but which is attended with more or less stiffness and imperfection in the movements of the joint. The inflammation of the bone soon extends to the cartilaginous covering of its articular surface, and thence is propagated to the synovial membrane, and to the external soft parts that surround both the bone and the joint. It produces, in the first instance, general swelling of these parts, enlargement of the joint without alteration of its colour,—that is, a *white swelling*. But, sooner or later, inflammation affects the external soft parts; abscesses are formed; they discharge themselves, and fistulous openings remain. By these openings, when we introduce a probe, we are rendered sensible of the existence of disease of the bone. We find that portions of the bony surface are exposed, and in a state of caries. Affections of a joint originating in this way sometimes go on for a great num-

ber of years. The progress of scrofulous disease is usually slow: it bears an affinity to what is called chronic inflammation; and if the constitution be not much affected by the local mischief, you may have a succession of inflammations, of abscesses, of discharges from them, and the clearest evidence of caries; and this will go on for a very considerable length of time. Sooner or later, however, the constitution suffers much in consequence of the local disease; the patient loses his appetite and his flesh, he cannot rest at night, goes into a state of hectic, is worn out, and sinks in the way that I have mentioned to you. In many instances, however, the local disease, after proceeding for a certain length of time, becomes stationary, and the process of restoration commences. When the patient is placed under favourable circumstances, the discharge from the fistulous openings lessens, the carious portion of the bone becomes separated, the swelling of the joint diminishes, the articular surfaces become connected together by ankylosis; and thus the motions of the joint are either very much impaired or completely lost.

Affections of the joints that have their origin in scrofulous disease of the bone very frequently appear in more than one part of the body, the cause consisting in a diseased condition of the constitution; and sometimes you have a succession of them appearing in various parts of the body, one after another.

I attended for several years a young girl, who was the offspring of a father and mother both of them bearing marks of a scrofulous constitution,—and, in fact, both died comparatively young, of tubercular phthisis. A sister of this young person also died from disease of the lungs. This girl herself had, in the first instance, obvious marks of a delicate constitution. She was the subject, when a child, of chilblains, evidencing, in a striking form, that the circulation was languid and feeble; and the feebleness shewed itself in other affections of the extremities. She then had scrofulous disease commencing in the bones of the feet, particularly in the os calcis of one side. This proceeded to the extent of suppuration, and the formation of a fistulous opening reaching up the back of the bone, but it never produced much influence on the system. The opening sometimes closed up; sometimes, matter forming, it would discharge itself again. After this had existed for some time, she was observed to stoop much forward; and, upon examining into the circumstance, there was found to be an obvious projection of the spinal column of the back, a deviation from the regular straight line of the body at the lower part of the back and upper part of the loins. There could be no doubt that a scrofulous disease existed in the bodies of the vertebræ. This never

led, however, to a serious effect. It was principally evidenced by a depression of the head and neck between the shoulders, not attended with much pain ;—it did not lead to the formation of abscess, or serious symptoms. Under the treatment adopted in this case, which consisted of means calculated to strengthen the system, without the use of counter-irritation, or measures that could reduce the frame, the affection of the spine, whatever it was, might be said to pass off. She then had a disease commencing in the hip-joint. This, however, was more formidable than the other affections : it proceeded to the formation of abscesses in the neighbourhood of the hip, a large collection of matter was developed, repeated suppurations took place, and she ultimately died hectic.

In diseases of the joints, which are referable to scrofula, the *general treatment* of the patient is a circumstance of the first consequence. In this, as in other scrofulous affections, our object is to adopt all the means that we can to strengthen the frame. In proportion as we invigorate the system, we shall find that the local affections which derive their origin from the scrofulous disposition, will be improved. We must carefully avoid, in the treatment of these cases, the adoption of all such means as are calculated to lessen the powers of the system generally, for by so doing we should aggravate the local affection. In scrofulous affections of the joint, then, we must take those general means for strengthening the constitution which I have already pointed out in the observations that I offered to you on the subject of scrofula. You must give the patient all the advantages that can be derived from residence in pure air and the use of nutritious diet, and pay attention to all the circumstances generally which promote health. The advantages of pure air are very conspicuous in the treatment of diseases of the joints of a scrofulous kind. Patients who have such affections do particularly well at the sea-side ; that is, patients in whom affections of this kind shew themselves in large towns, derive the greatest benefit from being conveyed to the sea-side, and enjoying the advantage of tonic, bracing air, such as is there found. We find that patients in whom we have tried a variety of local means without any effect, as long as they remained in London and other large cities, in whom the affection was going on from bad to worse, will get well without any local means being employed, or at least by the employment of those of the simplest kind, when they are conveyed to the sea-side.

There is a charity established at Margate, called "The Margate Sea-bathing Infirmary," where bad scrofulous cases are received, and where patients have the advantage of sea-air and sea-bathing. I under-

stand that the practice there, in scrofulous cases, is pretty much confined to the application of salt water, whatever local affection there may be. Now I apprehend this does not arise from any virtue in the salt water ; but the truth is, such patients do well in consequence of the benefit the constitution derives from change of air ; and when the constitution derives such benefit, it is immaterial what local treatment is employed. The *internal* means that we use in these cases are employed with the same kind of view. Steel is a medicine of great use under such circumstances ; and also the mineral acids and bark. The patient should have a good and rather nutritious diet ; and, with regard to medicine, so far as it goes in other respects, hardly any thing more is requisite than such as may assist in regulating the state of the stomach and bowels.

The local disease, in these cases, may occasionally require the employment of mild antiphlogistic treatment. If there be swelling, with heat of the joint, and these symptoms are accompanied with pain, the application of a few leeches—and perhaps of fomentations and poultices, will be serviceable. But you must be cautious not to carry these means, particularly the local abstraction of blood, to such an extent as to weaken the patient, and not employ these means simply in consequence of the mere existence of pain in a joint ; and this observation will apply equally to those diseases of the joints which commence with ulceration of the articular cartilages. The mere existence of pain in a joint is not an indication for the employment of active antiphlogistic means. If there be swelling—if there be redness—if there be increased heat joined to pain—then, in these circumstances, the application of leeches may be proper ; but, both in scrofulous affections of the joints, and those commencing with ulceration of the articular cartilages, there is often great pain, without the existence of those other indications of inflammation which would require local bleeding. The existence of such pain may require the employment of narcotics, particularly opium, or Dover's powder.

The circumstance of rest is equally as important in the treatment of strumous affection of a joint as in other cases that I have alluded to. I would not pretend to say to you, that counter-irritation is not to be employed under any circumstances in those cases that we deem to be of a scrofulous kind, but it is not to be employed *generally* ; the other means that I have now specified are the principal—the leading means of treatment. Counter-irritation is only to be employed under certain circumstances ; the employment is the exception, and not the general rule.

A plan of treating diseases of the joints,

consisting chiefly in the use of certain local means, has been largely practised by Mr. Scott, of Bromley; and the method which he employs has been lately described in a work "On Chronic Inflammation," published by his son, Mr. Scott, junior, who now lives in London. The plan followed and recommended by these gentlemen, according to the description in the work that I have alluded to, is this:—The surface of the joint is, in the first place, to be rendered completely clean—to be cleansed with soap and water very perfectly; the surface of it is then to be washed over with camphorated spirits of wine, and sometimes applications more stimulating are used, such as tartar emetic ointment; but, generally speaking, the camphorated spirit of wine is sufficient, being used till a slight degree of redness is produced on the skin. The surface is then to be covered by mercurial ointment spread thickly on lint; and this mercurial application is composed as follows: soap cerate and strong mercurial ointment, equal parts, with one drachm of camphor to one ounce of the mixture. The application thus formed is to be spread quite thick on a piece of lint, and the joint is to be entirely covered with such piece of lint, particularly in affections of the knee; in fact, the application is to extend six inches above and below it. This application is to be fastened on by long strips, such as are used in the treatment of ulceration of the limbs, spread with emplastr. plumb.—These are to be applied round the part which is covered by the mercurial application, so as to inclose it completely. Over these strips there is placed a covering of soap cerate, spread on strong leather—to be put on four pieces—one over the front of the joint, two others around the sides, and the fourth is to cover the whole: and this is to be confined externally, not very tightly, by a common roller. That is the mode of treatment recommended by Messrs Scott, in cases of disease of the joints, when such disease is not in an active inflammatory state; for, if inflammation be present, they recommend the previous employment of antiphlogistic means, the local loss of blood, or such measures as are necessary to remove the inflammation.

Now you observe, in this treatment certain points are secured, which correspond with what general experience has pronounced to be useful for the treatment of diseases of the joints. Means are employed externally, which are of an irritating kind, and are calculated to act upon the skin in the way of counter-irritation; and thus you relieve the internal disease. These strips, and the plaisters and bandages which surround the joint, give a firm support, inclosing it in a tolerably firm external case, which keeps it absolutely at rest. Thus this plan of treatment answers the further purpose of preventing

motion of the joint, keeping the diseased part in a state of absolute quietude; and under particular circumstances these gentlemen recommend the application of external support, by moistened pasteboards. So far, therefore, this treatment of diseased joints, although it is a little different in mode, is on the same principles, and answers the same purposes, as are accomplished by the more familiar and long established modes of treatment.

A question naturally occurs, whether this free application of mercurial ointment to a large portion of the limb, is capable of being of use in all the various diseases to which the joints are liable? I must mention to you, that this plan of treating joints is recommended to your trial, as I have stated, without any distinction as to the circumstances causing the disease—whether the affection of the joint originates in the synovial membrane, or in the articular cartilages, or in scrofulous affection of the bones. Now, whether the application of mercurial ointment in this very large way, is capable of doing good under all these various circumstances, is a question that must be solved by experience; and I cannot say that I have had such experience on the subject as enables me to answer the question.

I take it we shall be rather inclined to ask another question on the subject, which is—whether this free application of mercurial ointment to so large a surface of the body, and to a surface which not uncommonly includes some portion of ulceration, can be considered as perfectly safe—that is, whether there may not be an absorption of mercury from the surface capable of producing certain effects on the constitution? I do not find any mention made of such effects in the work of Mr. Scott; it is not even noticed there that the mercurial ointment in this way is capable of producing any such influence. Now I have only seen this kind of treatment employed in a few cases; but in one of those in which it was employed (that of a child, in which it was used by Mr. Scott himself), it appeared to me that the life of the child was nearly lost in consequence of the effect produced from the absorption of the mercury into the system. The mercury produced a serious affection of the bowels, which, in the first place, shewed itself by pain, griping, and purging, and then put on the appearance of a dysenteric affection. The child lost its appetite, became extremely thin, had a white tongue, and, in fact, seemed to be sinking—going as fast as it could; and there was no other circumstance to which these effects could be traced, except the influence of this mercurial application to the diseased knee. Under these circumstances the parent of this infant, who was a physician, had the dressings removed, and sent the child into the country, where it quickly recovered. Mr. Scott informed me (for I saw the application



made in this case), that he had not seen similar effects to this arise from the local application of mercury in any other instance.

### *Loose Cartilages in the Joints.*

The joints are liable to a curious affection, which consists in the appearance in them of a loose portion of cartilage.

[Mr. Lawrence then presented two specimens of such loose cartilage, both of which, he said, he removed himself. There was one cartilage in each case. The substance presented the appearance of regularly dense, completely white cartilage, tolerably smooth on the surface. They were about the size and appearance of a French bean. In both cases (he did not know whether it was so generally), there was a small nucleus of bone, and when the cartilage came to be cut through, the interior was hard; it offered a degree of resistance which shewed that the centre was bony.]

These substances are found completely loose in the joints—floating in them. I believe they have never been seen as the subjects of surgical treatment, except in the knee joint. They have been found after death, both in the elbow and in the joint of the lower jaw; but I do not know that they have ever been extirpated by surgical operation, except from the knee joint.—The first question that occurs about these substances is, how come they there—how are they produced? We must suppose they are formed originally from the surface of the joint—that they are produced something in the same way that tumors are—that they derive their growth from the vessels belonging to the surface of the joint itself; and that, being connected by a slender neck, after a time they are rubbed off and detached. That is what we must suppose—they grow originally from some part of the surface of the joint, and then they become loosened. Mr. Hunter seems to have been of opinion, that they could be produced in consequence of an effusion of blood into the joint. He explained a great many circumstances that took place in the animal economy by an effusion of blood, and its subsequent organization; but we must observe, that so far as the loose cartilages go, this mode of explaining their origin is completely imaginary. There is no proof whatever of the effusion of blood in such cases. However, loose cartilages are found now and then in joints, but the affection is not a very common one. They move about from one part of the joint to another; we can feel them when they are situated in such parts of the joint as are near to the surface, but if we come to examine them, they slip from the end of the fingers and escape—pass into the interior of the joint. They often remain in the internal part of the joint, so that neither the patient nor the surgeon can detect them, or be aware

of their existence, for a considerable length of time, and then again they appear under the surface. In consequence of their moving about, they are liable to get between the ends of the bones, and thus interfere with the movements of the joint. They pass suddenly into such situation when the patient is walking, and perhaps get between the ends of the bones, and then produce the most severe and sudden pain, rendering the patient incapable of moving the joint. In this way they sometimes produce so much inconvenience—they interfere so much with the movements of the joint in which they occur, that it becomes necessary to adopt some means, either for putting a stop to this inconvenience, or for completely getting rid of the cause.

Sometimes it has been found practicable to remedy the inconvenience, by subjecting the joint to pressure—by putting on a laced knee cap, for instance, or a bandage. It has been found, that when a joint is thus pressed externally, that the cartilage has not interfered with the movements of the part, and the notion is, that it has been forced into some particular situation, and so held there that it could not again get between the ends of the bones. In general, however, this plan does not succeed, and patients make up their minds to undergo what must be deemed rather a hazardous measure—that of making an opening into the joint, and allowing the removal or extraction of these bodies. I say this is a hazardous measure, because, from the observations that I have already submitted to you, you are aware that penetrating wounds of a large joint are always attended with risk. There is a risk of inflammation arising, and leading to the subsequent stiffness of the joint; there is a risk of the inflammation proceeding farther, and producing effects that terminate fatally; so that the operation for the removal of a loose cartilage from the knee joint, although very simple as to its mere mechanical performance, is not to be undertaken lightly, nor without apprising the patient or his friends of the possible danger. It must be observed, however, that if the operation be undertaken with due caution—if there be proper preparation of the patient—if it be performed in a skilful way, the removal gets rid of a serious evil, while at the same time the powers of the joint are perfectly restored—that is, the slight wound which is sufficient to allow the escape of a body of this kind, unites by adhesion, and no inflammation takes place in the joint. The recovery is perfect.

The mode of performing this operation consists in getting the loose body into some situation as near as possible to the surface, where it can be completely fixed. In the knee-joint, for example, the loose cartilage is generally got upon an external flat surface, either the external or the internal condyle of

the femur. You are aware that the synovial membrane of the knee joint ascends over a certain part of the condyles, so that a part of what we may call the external surface of each condyle belongs to the joint. Then if the loose body be got into that situation, and firmly held by the fingers of an assistant, you merely have to make an opening through the integuments and the synovial membrane of the joint, and the loose body will escape. It has been recommended, and it is a circumstance worthy of attention, if you can accomplish it in the operation, to draw the skin a little to the side and pinch it up, before you make the incision through the soft parts, so that when you let the skin go again the wound of the skin and of the capsule will not correspond; there will be a valvular opening in the joint, and hence you may more securely confide in adhesion taking place. Having made this opening, and having allowed the body to escape, we bring the edges of the wound together, maintain them in apposition, keep the knee perfectly quiet, have the patient perfectly at rest in bed, attend to diet and all other measures calculated to prevent the occurrence of inflammation. For an important operation of this kind you should prepare the patient previously—keep him rather low for a few days, take care that his bowels are well opened. I think generally it will be of advantage to keep the patient in his bed for two days, with the knee in a state of extension, so that he may be accustomed to that rather uneasy situation before we actually perform the operation.

One of these substances (reverting to the specimens) was removed from the knee of a patient in the hospital about two or three years ago. The subject was an unhealthy person; he had been in a state of bad health for some time. He had a sallow look when he came to the hospital, his appetite was gone, and his tongue white; however we took all the means that we could to put him in a good state of health before the operation was performed. It appeared that the wound had united by adhesion; however, in four or five days afterwards, hæmorrhage took place from the wound, the edges of the wound became separated, inflammation slowly established itself in the joint, fever took place and assumed a violent character, and the patient died. On examining him, the liver was found beset throughout the whole of its structure with small purulent deposits, varying from about the size of a pea to the size of the end of my thumb; there were many hundreds disseminated through the liver, and one small one was found in the brain.

This other specimen I took out about a year ago, from the knee of a gentleman who had been troubled by it for a number of years. For a length of time he suffered a deal of inconvenience in the knee, the cause of which was

not known; but it was ultimately discovered to be a loose cartilaginous substance, and I removed it for him. Symptoms of rather an alarming kind came on in the joint in this case after the operation, although I had taken great care to prepare him for it before it was performed. However, by bleeding him from the arm, applying leeches to the knee, and adopting vigorous antiphlogistic means of other kinds, the case did tolerably well, and the gentleman was soon able to go out again after the operation.

#### NERVOUS SYSTEM.

I come next to speak to you of affections of the *Nervous System*, and, in the first place, of

##### *Injuries of the Head.*

Injuries affecting the external parts of the head are to be treated on the same principles which I have already mentioned as applicable to this subject generally. Whether injuries of the scalp consist in bruises alone, or are combined with ecchymosis—whether they consist of incised, lacerated, or punctured wounds—whether those wounds are simple division of the scalp, or whether they are complicated with detachment of the scalp or with exposure of the bone, or with wounds of the arteries near to the injury—the general principles of treatment already mentioned are applicable to all such cases. I would only observe to you, that, in consequence of the connexion of the external covering of the head with the internal parts, injuries of this kind are more important in the head than other parts of the body. Hence we can have no hesitation in agreeing with an author who said *nullum vulnus capitis contemnendum*; which I am induced to mention to you in Latin, because it sounds rather better than in our own tongue—"No wound of the head is to be thought lightly of."

I have mentioned that *ecchymosis* may happen. Sometimes the blood is effused in consequence of an injury to the head under the aponeurosis of the occipito-frontalis muscle. The aponeurosis of this muscle is connected to the pericranium by loose cellular membrane, and if vessels of some size be opened and pour their blood into this situation, it will sometimes separate the aponeurosis, together with the scalp, to a considerable extent from the bone. You may have an effusion of blood extending over nearly the whole upper and lateral parts of the scalp, lifting up the scalp from the bone, so that you can hardly feel it by external pressure. Although such cases of ecchymosis may be very extensive, the blood that is thus effused will be absorbed, if we put a stop to the effusion by ordinary antiphlogistic treatment. The head should be shaved, covered with cold lotion, and other means should be employed calculated to check vascular action. It is not necessary in such cases to make an incision or opening to evacuate the blood

effused, even if it be so extensive as to lift up the scalp so that you are hardly able to feel the bone.

Blood may be effused under the pericranium, between that membrane and the surface of the bone, and ecchymosis in this situation gives a feeling which you cannot distinguish from that produced by fracture of the skull. The border of the effusion has a firm sharp edge to the feel, exactly like that of a fracture; and no person, however experienced, from the mere sensation could distinguish, in my opinion, between the two—in fact, to the most experienced hand it feels like a fracture. You must therefore, under such circumstances, examine extensively the whole of the part affected, see the configuration of the sharp border; and notice the other symptoms, to determine whether the sensation in question arises from fracture or merely from the causes that I have mentioned.

The various parts that are external to the brain may be injured in various ways. Thus, if we come to enumerate all the injuries each of these may be susceptible of, and if we particularize all the varieties of such injuries, we should really make a very long catalogue: but, fortunately for us, the treatment is by no means so diversified, but is tolerably simple and uniform, consisting, in almost all these cases, of the adoption of such means as are calculated to prevent the occurrence of inflammation.

In the case, then, of a serious wound of the scalp, which may be attended with either a real or a supposed fracture of the skull, with symptoms of internal injury of certain parts; or in cases of severe blow on the head, without any external wound—without any urgent symptoms, or without any reason for suspecting internal injury—in these various cases one and the same course of treatment is at first to be adopted. In the first place you should shave either that part of the head which has received the injury or the scalp generally, so that you may have an opportunity of carefully examining the surface; and this preliminary measure has the further advantage of allowing you to apply cold to the surface of the head freely, by means of wetted cloths;—that is a general measure, which is almost invariably applicable. The patient must be kept at rest; he must abstain from all exertion, whether mental or bodily; he must be put upon low diet; he must have his bowels cleared by the exhibition of active aperient medicines, and blood should be taken from the arm.

These are the *general* measures of precaution that are to be employed under the various circumstances that I have enumerated. We may not perhaps find, in all cases, that it will be necessary to adopt the whole of this treatment; it may not, in every instance, be necessary to take blood from the patient's

arm; but I should say that, under the particular kind of circumstances that I have stated, this is the course that is to be followed, although there may be some particular reason in individual instances to induce you to deviate from it.

Injuries of the scalp are liable to be followed by the occurrence of erysipelas; perhaps more so than injuries occurring in other parts of the body;—and the treatment of erysipelas, when it ensues from injuries of the scalp, is the same as that of erysipelas under other circumstances, excepting perhaps the particular local circumstance that the head is more likely to suffer in these cases. Hence rather more active antiphlogistic treatment may be expedient in a wound of the scalp penetrating through the whole thickness and through the aponeurosis of the occipito-frontalis muscle; the inflammation which then supervenes may affect the cellular membrane which connects the aponeurosis to the pericranium. This is rather a serious case when it occurs, and I apprehend is the case which many of the old writers have considered inflammation of the aponeurosis of the occipito-frontalis muscle, although that is a part, like other fibrous structures, that is little liable to inflammation. Inflammation of the cellular membrane in this situation may occur under such circumstances in consequence of a wound of the scalp, such as I have described, having been injudiciously treated, or the proper arrangement of which has been neglected. Supposing the wound not to have been brought together, the edges to have been left open and exposed so that inflammation has arisen in them—supposing the patient has been allowed to follow his ordinary avocations, been allowed to take his ordinary diet, and that of a stimulating kind, and that no attention has been paid to the circulating or digestive organs—a wound so circumstanced will be very likely to produce inflammation of this structure, and the effect that then takes place is that kind of inflammation of the scalp which we called phlegmonous erysipelas. A puffy tumor arises about the region of the wound, the margin and surface of which assume a yellow and unhealthy character, and produce a thin watery discharge instead of good pus. The scalp, too, for some distance round the inflamed part, has an œdematous feel; you can make a certain impression upon it by pressure of the finger; and if this state of the affection be not relieved speedily, it extends over the whole of the head. The swelling becomes very considerable, the redness on the head gradually extends from the wound, and febrile symptoms of a high kind accompany it: often the pulse becomes full and strong, there is frequently great pain in the head, restlessness, white tongue, want of appetite, and a costive state of the bowels. This is a case which obviously requires free



antiphlogistic treatment: you must take blood from the arm—take blood freely from the inflamed scalp by the application of leeches—exhibit active aperient medicines, follow them by salines and antimonials, putting the patient on low diet, and keeping him at rest. But these means are often not sufficient to check the evil, and under these circumstances it has been recommended by Mr. Pott to make an incision through the inflamed part down to the bone: an incision of an inch or an inch and a half will often do more towards relieving these symptoms than the antiphlogistic means have accomplished. The employment of an incision, in fact, in these cases, produces the same benefit that the division of the skin and cellular membrane produces in phlegmonous erysipelas in other parts of the body. If matter have formed, the necessity of such an incision is still more urgent. If the inflammation of this texture be allowed to proceed unchecked, it will terminate in suppuration, and in mortification of the cellular membrane, seated under the aponeurosis of the occipito-frontalis muscle; and it will sometimes extend over the whole of the scalp. Openings then form in various situations for the discharge of the matter, and through these large masses of fibrous sloughs, bathed with pus, are extracted—that is, the cellular membrane in that situation is converted into a slough, and is drawn out of such openings. But although the whole of the cellular membrane should thus go into a state of sloughing, you will not find that any mortification of the scalp will take place, for you will recollect that the scalp is differently circumstanced to the integuments of the limbs. For example—if the cellular membrane under the integument of a limb mortify, the nutrient vessels that go into the integument are cut off, and the skin loses its vitality; but when the cellular membrane of the occipito-frontalis mortifies, you will remember that the scalp receives its supply from the external branches of the occipital and the temporal arteries—that is, the great arteries of the skin run below the integument of the aponeurosis, so that the scalp does not lose its supply in consequence of mortification in that particular situation.

#### *Fractures of the Skull.*

Injuries of the head may fracture the skull; and the mechanical injury which is thus produced varies considerably in its circumstances. You may have a single and simple fissure of the bone;—to use common language, the bone is merely cracked, just as a piece of glass may be cracked, without being broken; and you can discern on the surface of the bone a fissure, which sometimes is fine—it requires considerable attention to ascertain its existence; hence the term of *capillary fissure of the skull*. You

may have two or more such fissures proceeding from the point at which the violence has been inflicted as from a centre: and sometimes there are so many of these, proceeding in such different directions, that it is called a *starred fracture*. The fracture of the skull may be accompanied with a depression of one of the sides, or indeed of both sides of the fissure—more commonly of one; that is, one side of the fissure is beaten in under the other. It may not simply be depressed below the edge of the other, but it may be beaten in considerably below it—pushed in upon the membrane, and even upon the brain itself: that is called *fracture with depression*. And hence, in fact, the most important division of injuries of the skull is into simple fracture—that in which the bone is merely divided and fissured; and fractures with depression, where there is a separation of the edges of the fissure, and a falling in of one of those edges.

A portion of the skull may be comminuted, that is, broken into small pieces; and those pieces may be completely detached—separated from each other and from the soft parts. They may also be beaten in upon the membranes, or upon the brain itself, to various depths, according to the nature of the injury.

There may be a separation of the bones of the cranium at their sutures—a fracture separating the bones in the course of a suture. This is not, in point of fact, actual fracture, although it arises from the same kind of injury; and it probably requires as great an injury to produce a separation of the suture as that which is necessary to fissure the bone elsewhere. In young subjects, where the bone is somewhat soft, where there is a considerable quantity of animal matter, and a less proportion of earthy matter than in the adult, the head is susceptible of a particular kind of injury, which is called an *indentation*. Without an actual breaking through of the skull, the bone may be beaten in so as to occasion an interruption in the general convexity of the skull,—it may be indented, but not actually broken. It is not common to see a fracture of the skull in young subjects. The bone is capable of giving way so much, in the manner that I have mentioned, that the bone does not actually break through; and such indentations generally gradually rise to a proper level within a short period of time after the occurrence of such injury.

The skull sometimes is not broken to the same extent externally as internally: it is not uncommon to have a fracture of the internal table extending farther than that of the external table: and, in cases of depression, it is by no means unfrequent to have the internal table considerably beaten in, while the external table is only very slightly depressed. I believe there are instances

known in which the internal table has been broken, and considerably depressed, while there has been but a slight injury of the external table. It appears that the internal table is more brittle than the external, and that the fracture extends farther in the former than in the latter.

Fracture of the skull may be accompanied with injuries of various kinds of the parts contained within the cavity, or there may be simply the mechanical injury to the bone: and it is important to bear this in mind, because if, in a particular injury, you see that the skull is broken, and you only noticed the symptoms that existed, you might infer that all the symptoms in the case arose from the fracture. There may be some kind of injury in the internal parts which, independent of the fracture, might be capable of producing what we call *concussion*, which I shall afterwards describe to you.

The fracture may be complicated with other injury of the brain, or may exist alone, without such complication.

The fracture of the skull may be simple; that is, there may be a mere fracture of the bone; or it may be combined with a wound in the external parts, connecting itself with the bone, which constitutes compound fracture. In this respect the same kind of distinction exists in the skull as in the fracture of the bones of an extremity. There is a simple fracture of the skull, and a compound fracture of the skull; but I must observe that there is not the same relation in point of seriousness in the two cases. Compound fracture of the skull is not to be regarded as so much more serious an occurrence than simple fracture, as compound fracture of the leg is than a simple fracture.

Fractures of the skull distinctly differ in this respect: some of them—indeed the majority, are produced by the *direct* application of force to the fractured part. A person is struck upon the head, and the bone is broken exactly at the part where the blow is inflicted. But there are instances in which the bone is not broken at the part immediately struck, but broken at some distant part; and this latter accident is called fracture *by counter-stroke*: the French call it fracture *by centre coup*. This kind of fracture, I believe, is almost, if not entirely, confined to the base of the skull. If a person fall from a great height upon the ground, on the vertex or top of the head, then the skull altogether is subjected to the action of two forces;—there is the pressure of the skull upon the ground, and there is the weight of the body upon the base through the vertebral column; and the skull being thus included between two forces, acting in opposite directions, gives way at the weakest part,—that is, at the basis; which is much weaker mechanically than the upper arched part, which is thicker, and, from its peculiar structure,

stronger. If a very heavy weight fall upon the skull from a great height, the person being upright, he is exposed to the opposite forces,—between the force of the weight falling from above, and the resistance which the vertebral column affords beneath. Under such circumstances the skull does not commonly break at the top, where it is struck, but at the base. Fractures of the base of the skull are, therefore, in general of the second kind that I have mentioned to you—fractures by counter-stroke. Whether fractures by counter-stroke take place under other circumstances, is rather doubtful; although some persons think, that if an individual be struck on the forehead, he may have the back part of the head broken, although I do not see, for myself, how that can occur. All fractures of the basis of the skull are not fractures from counter-stroke: if a fracture be produced by direct violence towards the lower part of the head, on the occipital and temporal bones, the fracture thus produced by direct violence may be continued into the basis of the skull.

Such are the principal varieties of fracture of the skull. These injuries are produced by different degrees of force; and of which, generally speaking of course, we consider those as the most formidable that are produced by force of the greatest degree; and fractures of the skull, therefore, that are produced by gun-shots, are more serious than those that are produced by slighter kinds of injury.

The treatment that is to be adopted in these cases, I shall defer till the next lecture.

## LECTURE LXII.

*Fracture of the Skull continued—Operation of Trephining—Injury of the Membranes of the Brain—Hernia Cerebri—Effusion—Compression—Concussion—Delirium—Convulsions.*

Fracture of the Skull, gentlemen, is not of consequence in itself, though it is important as indicating the degree of violence which has been offered to the head, and as also furnishing a presumptive evidence that the contents of the cranium have suffered injury.

The treatment of a case in which the skull is fractured must be conducted on a consideration of the other symptoms that are present. The circumstance of the bone being fractured will not occasion any difference in the conduct we have to pursue: if the case be managed judiciously in other respects, the fracture of the skull adds nothing either to the danger of the patient or to the difficulty of managing the accident. So far as the injury of the bone goes, it is repaired very effectually by the natural process.

[Mr. Lawrence here presented a specimen, in which there was a fracture commencing at the lower part of the frontal bone, on the left side, and running obliquely across the

head to the posterior part of the skull cap. It was really very nicely joined together; the bone there was not united by a considerable quantity of rough matter projecting externally as was seen in the callus of fracture of the long bones, but it seemed as if nature supplied just enough to consolidate the fracture, not laying down bone so as to produce the slightest pressure or inconvenience upon the parts beneath. Mr. Lawrence also presented a skull cap fractured, with depression, in which there was a dent as if the skull had been depressed by a violent blow inflicted by some small instrument, and there was a corresponding indentation inside: it was completely consolidated.]

If the fracture, however, be attended with depression, that circumstance may cause pressure on the brain, and this produces symptoms of a very serious kind. If these symptoms exist to a certain degree it is judged necessary to adopt a proceeding for removing the pressure produced by the depressed part of the bone—for raising, in fact, the depressed portion of bone to its proper level; and the operation that is adopted for that purpose is usually called *trepanning* or *trephining*, for it is generally accomplished by means of a circular saw. The instrument which was formerly used was called a *trepan*, while that now more commonly employed is called a *trephine*. Other instruments are used, by which the purpose may be accomplished without the necessity of taking away so much bone as is removed in cases where we employ the circular saw.

The practice of employing this instrument in cases of fracture having been found advantageous in cases where the bone was depressed, it has sometimes been considered as fit to be used generally in all cases of fracture of the skull. The members of the French Royal Academy of Surgery (a body of men to whom surgery is greatly indebted) held and defended in their writings the doctrine that all fractures of the skull ought to be trepanned, and from them this opinion was taken up, promulgated, and defended by the late Mr. Pott. It may appear very extraordinary to us that men who shewed so much discernment and good sense in the remarks they made on other parts of surgery, should have taken up so very strange a notion as this, and retained it apparently for a considerable time. Mr. Pott gives the reasons why, in his opinion, the practice of trepanning should be adopted generally in fractures of the skull: he says it is true in many cases that fracture of the skull is not attended with any symptoms that actually require this operation at the moment, but, although there may be no symptoms denoting affection of the membranes or of the brain, that inflammation of those parts will come on at a more or less remote period of time, and therefore

the operation should be had recourse to in order to prevent the occurrence of such inflammation. It is very true that inflammation does not come on immediately after the accident in certain cases of fracture of the skull—that you may have accidents attended with fracture of the bone in which no immediate symptoms follow the injury, and in which, nevertheless, at a more remote period, inflammation may occur.

The consequence of fracture of the bone, of course, is a partial separation of the dura mater. From a mere blow on the head, without fracture, you may have some degree of detachment of the dura mater, that is, you may have a separation of some of the small vessels which go from the dura mater to the skull, and the dura mater thus detached may, some length of time after the accident, become inflamed, and this inflammation may extend to the parts within the cavity. It is possible, therefore, that inflammation may occur at a remote period from the accident, but then a necessary link in the inquiry is—whether the removal of a part of the bone with a trephine immediately after the accident will tend to prevent the occurrence of inflammation? I think you must immediately perceive that it can have no such influence; on the contrary, that it is much more likely to favour the supervention of inflammation—to render this occurrence, which otherwise might be problematical, certain—and to increase the seriousness of the symptoms when they arise. What mode would you adopt in order to prevent the inflammation that would occur after a wound of the head accompanied with fracture? You would keep the patient very quiet, and adopt the treatment I have already explained to you. Would you think of making a large additional wound, which you must do, in order to perform trephining? would you think of cutting out a part of the bone, and thus produce an extensive exposure of the dura mater? would you adopt these measures in order to prevent the occurrence of inflammation?—the idea really is too absurd to be entertained for a moment. In the present day, then, we have entirely discarded the doctrine of employing the trephine, or instrument of any sort, in all kinds of fracture of the skull, and consider it as a measure that we are not to have recourse to except where there is depression of the bone, and that depression of the bone accompanied with symptoms of pressure on the brain. There are many instances of depression in which the bone is driven to the depth of the thickness of the skull; for instance, the upper edge of one bone may be corresponding in a line with the lower edge of the other side of the fissure. There are instances in which the bone is depressed more than this—half an inch, or sometimes three quarters of an



inch, below the level of the inner surface of the skull, and yet there are none of the symptoms which we consider as characteristic of pressure on the brain produced. In all cases of fracture with depression, whether the depression be little or whether the depression be great, unless symptoms be present indicating pressure on the brain, it is not judged right to proceed to the operation of trephining it. It has been stated that the depressed piece of bone, if not elevated, may become a source of irritation to the contents of the cranium, the membranes of the brain, or the brain itself at some future time, or, at least, may delay the recovery of the patient, although, from the antiphlogistic treatment that has been adopted immediately after the accident, and the rest to which we subject the patient, no such symptoms arise then; and some cases are recorded which seem to shew that this may take place. However it is not found in point of fact that such occurrences take place ordinarily, and therefore, although something like it should occur in one or two instances, I should not regard these as sufficient to lead us to depart from the general rule that I have mentioned of not using the trephine, or other instrument, in these cases, unless the depression of the skull should be attended with symptoms of pressure on the brain.

You must recollect that the operation in question is not a measure of a very trivial kind; the removal of part of the bone of the skull, and the exposure of the dura mater which it involves, of themselves bring the patient to considerable risk. In those instances that I have seen in this hospital, where the skull has been trephined, and where the patient has survived the operation, it has happened almost invariably that the occurrence has taken place which is called, *hernia cerebri* (which I shall afterwards have occasion to describe), and that generally terminates fatally. Now it is a fact in such instances, that much of the mischief which ensues is to be ascribed entirely to the performance of the operation. The question, therefore, of trephining, or not trephining, is not like the question of administering some particular medicine, or doing something trivial or unimportant; it is a question whether we should abstain, or not abstain, from doing that which in itself is a very serious operation, and which, independent of other circumstances, may expose the patient to very considerable risk.

The unfavourable results of trephining were so numerous in the Hotel-Dieu, that Desault had entirely abandoned the operation for several of the last years of his life. This may perhaps, in some measure, be ascribed to the unfavourable state in which the patients were situated in that hospital, which, at that time, was extremely

crowded, and the air very bad; and, of course, very unfavourable to the recovery of patients after a serious operation. But I must confess, that I should be almost inclined, if I were to draw my own opinion from what I have seen at this hospital, nearly to coincide with Desault. Of the instances in which I have seen the operation performed in this hospital, the greater number have terminated fatally, so that I can cite to you, as far as the experience of this hospital goes, very few instances in which the life of the patient has been saved by the operation of trephining. I believe the operations have been more favourable in those cases in which it has been performed in private practice, or in individuals who have undergone the operation in pure air, residing in the country.

The question of the operation might, perhaps, be regarded in rather a different light, when we are considering a case where there is an external wound, or a case in which there is no external wound. Supposing a fracture occurs, without a division of the integuments, and that we can feel externally an irregularity of the surface of the bone, which convinces us that depression has taken place, even there, unless the symptoms very strongly indicated pressure on the brain, I should not think of proceeding to the operation, because the operation in that instance involves making an external wound where there was none before, and a conversion of what is a simple fracture of the skull, into a compound fracture. The wound of the bone becomes then complicated with external exposure. If, on the other hand, there should be a free external wound, and the surface of the skull be already denuded, and you can see one edge of the fracture beaten in under the other, and you see that by means of an instrument called an *elevator*, introduced under the depressed edge, you can raise it up to a level, you of course would be inclined to do it; and, under such circumstances, there would be less objection to the removal of a portion of the bone with the trephine, because already there is an external wound, and you need not divide the soft parts for performing the operation.

If there are portions of the skull actually detached, and driven in—if they are completely separated from the surrounding parts, and more particularly if they are driven in so as to press upon the membranes, or on the brain itself, you would remove these fragments just as you would take away actually detached and loosened portions of bone in a compound fracture of an extremity. But if a fracture of the skull, although comminuted, be not attended with actual loosening, and a complete detachment of the fragments, and if we could not get them away without cutting the soft parts, and detaching them far-

ther than they are already detached, it is better to leave them alone; for the resources of nature here, as in other instances, are very considerable, and we often find the fragments, which we might have supposed would have been loosened and separated, are actually consolidated; they retain their vitality, and they are really united to the neighbouring parts. Of course, this process tends to lessen the chasm that will afterwards be left.

[Mr. Lawrence then presented an example of this kind.] Here is (he said) a compound fracture of the skull, with a loss of substance. You observe that there are about six fragments which have been separated, but become united to each other at the margin of the fracture.

*Injury of the Dura Mater, and Hernia Cerebri.*

The dura mater must, as I have already mentioned, frequently be injured in cases of fracture of the skull. Sometimes it is not only injured, but actually penetrated by the fragments, and the surface of the brain itself is wounded more or less extensively.—The substance of the brain sometimes experiences very considerable injury in some kinds of accidents occurring to the head, such as a wound by gun shot, where the bullet penetrates the skull, and where other, often large bodies, pass into the cavity of the cranium, and, of course, they produce considerable injury to the surface with which they come in contact. There is occasionally not only a wound of the surface of the brain, but an actual detachment—a considerable loss of substance of the brain. In comminuted fractures, particularly in young subjects, occasionally a part of the substance of the brain is seen in the wound, and sometimes a considerable portion of it comes entirely away.

The symptoms are not always so serious as you might expect in accidents of this kind; indeed, there is a diversity of result in this respect. Sometimes an apparently slight wound of the brain is attended with very serious, and often suddenly fatal symptoms.—An instance has been known of the brain being wounded by a penetrating instrument passing in under the edge of the orbit into the brain, or up through the nose, and the patient has died almost instantly, although the injury was apparently not very considerable. Baron Larrey gives a case of a Russian soldier, who was wounded at one of the battles that occurred in the Russian campaign, who afterwards came under his care, and in whom he extracted, from the anterior part of the head, a grape-shot that weighed seven French ounces, and had been in a good many days; but the patient recovered, and the symptoms before its extraction were not very serious,

nor were they so subsequently. I remember attending a young man who, in a fit of mental disturbance, in consequence of some disappointment in a love affair, put a couple of loaded pistols into his mouth and discharged them. He of course shattered his jaws, and injured himself dreadfully; but he lived about a fortnight afterwards. One of the bullets (for both pistols were loaded) was found in the chamber, but the other could not be found; we could not tell where it had gone. Inflammation of one eye took place after the accident; the cornea got into a turbid state, as if the eye were lost. When he died, the fate of the other bullet became explained, for I found it had gone through the orbit behind the globe of the eye, and had entered the cavity of the cranium by breaking the orbital process of the frontal bone, and had gone through just at the anterior lobe of the brain, and then passed up till it went about as far as the coronal suture, making a track all the way upon the surface of the brain. Yet, in that case, there was no one symptom during the fortnight that would have led you to suppose that he had received any injury of the brain whatever.

The treatment of a case in which the dura-mater is exposed, or in which the surface of the brain is denuded, will consist in completely cleansing the wound, removing all extraneous matters, approximating the edges, gently closing them, and then instituting very rigidly the antiphlogistic treatment that has been already described.

In many instances of this kind the circumstances take place which I have already mentioned some few days after the occurrence of the wound; and it happens in many instances where the patient has been going on favourably up to that time, that the dura-mater turns dark-coloured at some point—it seems to pass into a sloughing state, and a kind of bleeding prominence arises from the surface of it, gradually increasing, and filling up, in the first place, the vacuity which has been produced in the bone, and then rising up to a considerable height above it. It is a soft mass which thus arises, generally bleeding in some degree from the surface, so that a coagulum of blood forms upon it, and gives it the appearance almost as if it were composed of masses of blood. This occurrence, which is called *hernia cerebri*, or sometimes *fungus cerebri*, is the circumstance which I mentioned as having taken place in most of the instances in this hospital in which the trephine had been employed, and where the patient had lived long enough after the operation to admit of its taking place. The growth is what the name implies—*hernia cerebri*, extrusion of the brain through the opening that is made in the skull. When it has arisen to a certain height, it completely fills the vacuity

of the bone, and then it begins to experience pressure from the hard edge of the bone.

At this time, if not before, symptoms arise of a serious nature—the patient becomes comatose, or symptoms of excitement will take place previous to that time, which are followed by those of insensibility. If pressure be made on the tumor, with a view of restraining its progress, we find that such pressure very often produces insensibility—that is, the same kind of effect which is produced by pressure on the brain itself from other causes. If you come to cut off such protrusion, you find, in fact, that it is the substance of the brain passing out through the aperture in the skull. It generally happens, where this circumstance occurs, that the patient is lost, but that is not invariably the result. For instance: the protrusion, in some cases, does not increase—it becomes stationary—perhaps it shrinks a little; then the surface loses the bleeding appearance, and assumes a kind of brownish or dirty brown colour, giving issue to a fœtid discharge. The surface that is thus formed appears to be a sloughing of the substance of the brain. This seems to be the mode in which the substance of the brain loses its vitality and goes into the state of gangrene, and assumes a soft texture. The dirty brownish and softish substance gradually loosens and separates, and then red granulations spring up from the cerebral mass below. These granulations join with those formed by the margin of the integuments and surrounding soft parts, and the wound heals like an ulcer in any other situation. I think it is in the eighth volume of the *Medico-Chirurgical Transactions* that an interesting paper on this subject will be found, by Mr. Stanley; and I think the only successful instance, or favourable termination, recorded in that paper, is a case that was under my own care in this hospital, in which I had occasion, in consequence of a wound of the head, attended with the separation of a considerable portion of bone, to take away (it was in a child) a piece of the bone from the side of the head about two inches in length by one inch in width. This was followed by a large protrusion of the kind that I have just mentioned. After some days, at a certain period of the case, when the protrusion had attained about the size of a hen's egg, the protruding mass was removed to a level with the margin of the bone, and it was found to be a mass of cerebral substance. Compresses were then placed upon the surface, and pressure by means of bandage was made, according as the feelings of the patient would admit of. In this instance the protrusion was not reproduced; the surface of the brain exhibited the dirty greyish or brownish colour, with the very fœtid odour which I stated to you as

being the peculiar change which constitutes gangrene of the brain, and as that separated, the granulating processes that I have stated took place. During the whole of this process, however, pressure by means of compresses and bandage was constantly and carefully kept up upon the surface of the brain.

It appears to me, as Mr. Stanley judiciously remarks in his paper, that in cases where a portion of the dura-mater is denuded, either in consequence of a wound or by an operation, that it might be expedient to produce upon the surface thus denuded as much pressure, by means of compresses and bandage, as would replace the support which the part formerly received from the cranium; and with a view to prevent protrusion of the bone, it would be well to keep up the pressure during the treatment of such a case.

I must observe to you, that the removing of the fungus cerebri, and the employment of pressure upon the surface, will not succeed in all cases; there are instances in which it fails, and there are some instances in which, as I have already said, the protrusion seems to come to an end, and parts of the protruded portion shrink and drop off, even where pressure perhaps has not been employed.

#### *Compression and Concussion.*

I have mentioned to you that, after accidents occurring to the head, symptoms arise under certain circumstances which indicate pressure on the brain; and these symptoms are called by surgeons *symptoms of compression*. It is not always easy to say, in particular cases, whether the symptoms indicate compression or not, because we do not always know what the cause is that produces them. Various injuries may occur to the parts contained within the cavity of the skull that are without the reach of our observation. You have the opportunity of observing compression on the brain, in the most genuine and unadulterated shape, in cases of sanguineous apoplexy, where the blood-vessels give way in the substance of the brain and a large quantity of blood is effused, and you have effects produced simply from the pressure which cannot be ascribed to the action of any other cause. In the case, then, of a person who has an attack of sanguineous apoplexy, we find he is immediately deprived of sensation and voluntary motion—that the external senses and internal faculties are completely put a stop to. From that moment the patient loses entirely all power over the voluntary muscles; he falls to the ground, and remains senseless and motionless; the retina is perfectly insensible. If you open the patient's eye to the light, or bring a candle to it, no perception of light takes place, and you find the pupil is dilated and the iris



motionless. In that condition the voluntary muscles are relaxed; the limbs remain just in the position in which you may place them; the muscular coat of the bladder loses its power generally from this cause, so that the patient does not void his urine; the sphincter ani loses its power also, and the contents of the rectum pass away involuntarily; the powers of sensation and voluntary motion are completely suspended under such attacks, but the automatic movements go on; the circulation continues; the pulse, however, is rendered less frequent than natural; respiration still continues, but is performed more slowly—it is performed laboriously, with a degree of difficulty, and it is in that particular manner which is usually called *stertorous*. There is a stoppage in the passage through the nose; the expulsion of the air in respiration, in apoplectic attacks, if they are serious, generally elevates or puffs out the lips and cheeks; the voluntary muscles have completely lost their energy, and this is usually deemed a very unfavourable sign in such cases. These are the symptoms that are produced by pressure on the brain when it is the consequence of apoplexy.

Such pressure may be produced by a fracture of the skull, with depression; or it may be produced by effusion of blood within the cavity of the cranium in consequence of injury; or it may be produced by the introduction into the head of extraneous substances—namely, by gun-shot projectiles—as I have already mentioned.

The first object of *treatment*, in cases of this kind, is to remove the cause, when that cause is within our reach. Thus, if there be a considerable depression of the cranium, we should perform the operation which is necessary for elevating the depressed portion of bone. If there be effusion of blood in a situation in which we can reach it, we should endeavour to remove it. But here our powers of rendering assistance are much more limited than in cases of fracture with depression elsewhere. Blood may be effused, in consequence of injuries to the head, either on the *external* surface of the dura-mater, between the skull and the membrane, or in the *internal* surface of the dura-mater; that is, it may be effused from some of the vessels which run on the surface of the brain, from the membranes immediately covering the brain; or it may be effused into the texture of the brain itself, in some part or other. Now we are hardly able to render any help, except in the first of these occurrences; that is, where blood is effused between the cranium and the dura-mater. The vessels which pass between the dura-mater and the skull are so small, that, in general, the detachment of them from the dura-mater is attended with a very slight effusion of blood

from the surface of the membrane;—there is not a sufficient effusion to produce serious symptoms. The only part of the head in which an effusion of blood can take place on the external surface of the membrane, sufficient in quantity to produce serious pressure on the brain, is towards the lower and anterior part of the parietal bone, where the principal artery of the dura-mater runs in a deep bony channel, and is so situated that, if fracture extends to that part, the spinous artery being included in the bone is lacerated; under these circumstances effusion of blood to the extent of some ounces may take place between the cranium and the dura-mater.

[Mr. Lawrence here exhibited two specimens of effusion of blood of this kind.]

In the case, therefore, of fracture extending into that part of the skull, when symptoms of pressure on the brain are present, we might probably give relief by making an opening, and we might be able to get rid of the blood thus effused. When blood is effused on the external surface of the dura-mater, it is collected to one spot—it becomes confined by the adhesion of the dura-mater to the skull; but when it is effused within the cavity, on the internal side of the dura-mater, there is nothing to limit its diffusion, so that it extends itself over the surface of the brain generally. I believe we may say, therefore, as a *general* rule, that if we make a perforation, under the expectation of meeting with effused blood, and giving it an issue, but find that the dura-mater adheres to the skull in a natural way, we shall do no good by opening the dura-mater with the expectation of letting out blood that may be conjectured to be effused under it. Of course we have no power of relieving the patient from the pressure which is produced by blood extravasated into any part of the substance of the brain, because we cannot know of its occurrence.

Thus, in the majority of instances of compression, we are reduced to the employment of the same means that we have recourse to in cases of compression from sanguineous apoplexy; that is, we bleed the patient in order to put a stop to the effusion of blood into the brain; and we institute a rigorous antiphlogistic treatment in other respects. We find, under such circumstances, that the symptoms of compression may be relieved, and ultimately removed.

There are many cases of sanguineous apoplexy where patients have recovered completely by treatment of this kind; and where, having been examined at some distance of time after the occurrence of such an attack, remains have been found on the brain of an extensive effusion of blood into the texture, so as to shew that compressions of the brain, produced even by a large effusion of blood

into it, are not necessarily fatal, but that the patient may be conducted through the attack, and attain to nearly complete recovery—that a kind of palliative treatment remains in our power, even although we are not able to render any assistance externally, either by elevating the depressed bone, or evacuating the effused blood from the interior of the skull.

I should have observed with respect to the *symptoms* of compression, that they make their appearance at different periods of the case, according to the different nature of the cause that produces them. If compression of the brain be produced by a fracture, the affection of the system will shew itself immediately after the accident; but if it be produced by effusion of blood, that effusion usually does not take place immediately; or it may take place only in some degree, and go on progressively increasing; and then it is only some time after the accident, when the effusion has attained a considerable size, that strongly-marked symptoms of compression shew themselves. If, therefore, in the case of a patient who has received serious injury of the head, and been stunned, supposing the patient has recovered from the immediate effects, and then after some time symptoms of compression have shewn themselves, gradually increasing, there is a reasonable ground to infer that the symptoms of compression arise from an effusion of blood, though at the same time we have not the means of judging from this circumstance where the effusion has occurred; that must be judged of by other circumstances.

There is another kind of injury which takes place in consequence of accidents to the head, which is called *concussion of the brain*.

The name *concussion* seems to imply and denote that this injury consists in the shaking or the vibration of the substance of the brain. It is called by the French *commotion*. Now, by a *concussion* of the brain, we do not mean contusion—we do not mean any actual violence offered to the cerebral substance that we can ascertain by dissection—we do not mean the effect produced by a depressed portion of bone, or by the effusion of blood; those various circumstances that cause the symptoms of alarm that I have mentioned. What, then, is the meaning of the term? Why really we are not able to say precisely what the effect upon the cerebral mass is that produces the symptoms that we ordinarily describe as those of concussion. In some instances, when examining patients after death, we find that there is a kind of bruised appearance upon the surface of the brain which is occasionally found at a part remote from the immediate seat of the injury. It seems that some small blood-vessels have given way on the surface, and that it is like portions of blood effused in

the cerebral substance—that is, when we come to separate the membrane, the surface has a kind of brownish appearance;—this is seen occasionally, but not always. There are instances in which the circumstances that we call *symptoms of concussion* exist to a considerable degree; but when we come to examine the parts after death, we cannot find out any visible injury of the cerebral texture.

The phenomena of counter-fracture shews that the bony mass of the skull may be thrown into a kind of vibration throughout the substance, and that certain effects may be propagated from one part of it to another, sufficient to produce fracture in a different part; and inasmuch as the contents of the cranium fill it accurately, it is not unlikely that a similar kind of vibration may be communicated to the brain by the same injury. But this is all hypothetical—we do not know exactly what it is.

The effect of concussion is similar to that of compression of the brain, but it is not so great in degree. We cannot use these two words as indicating opposite states, or opposite effects; they rather indicate a difference in degree in similar cases. The powers of sensation and voluntary motion are considerably impaired in concussion, but they are not so completely interrupted, or suspended, as in the case of compression. There are also differences to be observed in respect to other symptoms.

The first effects of concussion consist in what persons, in common language, call *stunning*. A person, for the moment, loses sensation and is incapable of motion, in consequence of a blow on the head. This effect may be only temporary—it may last a few minutes and then go off, and the patient may recover his capacities; or it may be continued,—the state of insensibility, or want of motion, may last for some hours. If this state goes on, we soon find that, in addition to the interruption of sensation and of voluntary motion, the patient becomes cold, the circulation feeble, the pulse small and slow, and the surface of the body generally cold; general depression of the powers seems to be produced.—These are the primary or immediate effects of the injury when it takes the form which we technically call concussion. After a short time the circulation recovers, and the warmth of the surface is restored; so that the patient no longer exhibits the complete condition of insensibility and imperfect power of movement which he previously manifested, but he still remains in a comatose state—a kind of condition of sleep in which *ordinary* impressions on the external senses do not produce any effect. But if you speak very loud, if you pinch the skin, or do any thing to rouse the patient, you can get sufficient evidence that he is not in a state of actual insensibility.

If you speak loudly to him, he perhaps raises his head, or attempts to answer you, or moves or gives some sign that an effect is produced. In the same way, if you touch him or pinch him, he will draw away the limb that you touch, which shews that he possesses the power of motion; yet, if you leave the patient alone, he seems to remain nearly in the state of a person in a deep sleep. The senses are not affected by an ordinary degree of excitement applied to them; the powers of attention and perception seem to be lost for the time. There is an incoherence of ideas; if you put a question to him, he perhaps answers vaguely, or answers quite incoherently. Sometimes the patient will speak without being spoken to, in a kind of low muttering whisper, something like delirium. Such is the state that the patient is found in so far as regards the functions of the nervous system and the muscular powers. I must observe, that, in a state of serious concussion, the urine and fæces are sometimes voided involuntarily. If we go to the most serious cases of concussion, where the blow upon the head has been of the most violent kind, it may produce just the same effects as a very serious compression—an entire suspension of sensation and voluntary motion; indeed, an entire obliteration of the influence of the sensorium, not only over the powers of sensation and motion, but even over the circulation and respiration; so that sudden death may be produced by concussion—which shews that, in point of fact, concussion and compression are very nearly allied to each other. In the same way that, by a violent pressure on the brain produced by a large effusion of blood in apoplexy, a patient may fall down suddenly dead in a moment, so a violent blow on the head may produce sudden death in the way of concussion, although you are not able to trace out in the head, when you examine it after death, any actual mechanical injury of the part. The circulation is, in general, in some degree affected in cases of concussion. The pulse is more feeble than natural; after a time, irregular and intermittent. Respiration is carried on nearly naturally—the patient lies and breathes nearly as a person would do in sleep.

I have mentioned that the external senses, although by no means so active as in their natural state, have not their activity entirely suspended. In concussion the retina is sensible—if you open the patient's eyelid, he will draw his head away from the light. You find the pupil is contracted, not dilated, as in apoplexy. Very commonly sickness takes place soon after the occurrence of the accident that produces concussion, and the stomach rejects its contents. Now the patient does not remain exactly in one and the same state in concussion—ordinarily he con-

tinues in this kind of sleep, in this comatose condition: there are sometimes periods of restlessness, periods of agitation, perhaps of active delirium; and these are alternated with the state of insensibility. If you select, then, extreme cases of the two kinds of compression and of concussion, you see there is an obvious distinction between them. There is one uniform, permanent condition of insensibility and deprived power of motion in compression, but in concussion you neither have the complete insensibility nor have you the uniform state which characterizes compression, but a state of insensibility alternating with restlessness and a more generally active disturbance. In compression you have the absolute insensibility of the retina, a dilated pupil; in concussion you have pretty clear evidence that the retina is not in a state of actual insensibility, and you find the pupil is contracted. You have not the stertorous breathing in concussion; on the contrary, the state of respiration is nearly natural. Although the patient may, for the greatest part of the time, not use the voluntary muscles, you have sufficient evidence, when a stimulus is applied, that power yet remains, and that the empire of the will still continues over the muscles.

The phenomena, however, of these two states are sometimes mixed together, and there are numerous instances in which we may be at a loss to say whether you would refer the symptoms to compression or to concussion; and when we come to examine cases after death, we shall sometimes see, in instances where the patient has had what we should call symptoms of concussion, that in fact pressure has existed on the brain; and I have already mentioned to you, that concussion, when it is carried to a serious extent, produces just the same effects as pressure. You are, therefore, merely to employ these two words as convenient modes of distinguishing, in a certain way, the character of different cases, and not as indicating essentially different states of the brain.

Concussion is produced in consequence of a mechanical injury to the head—a blow; whether it be attended with fracture or not. In many cases the symptoms of concussion come on instantly, where there is no external wound, and where no fracture has been produced. It has been said that the phenomena of concussion are sometimes produced in consequence of violence offered to the lower part of the vertebral column—a fall upon the buttock, or end of the sacrum; but I never saw an example of that kind myself. After a certain time, inflammation of the membranes, or of the brain, will very frequently come on in those patients who exhibit the phenomena of concussion, so that then the case becomes one of inflammation of the membranes, or of the brain. Under



other circumstances the symptoms of concussion may last for several days, or weeks, and then gradually and slowly subside, and the patient will regain the full command over the sentient and motive powers.

The state of insensibility, in cases of concussion, may last some time. I have seen a patient lying, nearly in the state I have described to you, six, seven, or eight weeks, and then recover. Frequently, however, the recovery is partial. You may suppose that when, in consequence of the mechanical injury, the serious symptoms that I have just described have been produced, that it will not be unlikely that some permanent effects of such injury will remain.

*Hemiplegia* is sometimes produced; the loss of some sense—that of feeling, for example, or some mental faculty will be impaired, particularly the memory. In a great many cases, one sees considerable injury of the memory following these accidents; then, either some paralytic affection, or some impaired sensation, or some impaired mental faculty, will frequently be found as the consequence of those accidents which cause concussion. But these effects sometimes are only temporary—that is, hemiplegia, or some other paralysis, may last for a certain time, and then be slowly recovered from.

The first thing that you have to do with a patient who labours under symptoms of concussion is, to put him in bed—(I speak now of symptoms which are observed in the commencement—the primary symptoms), to cover him warmly, and leave him quiet, until he recovers from the stunning and depressed state of the circulation which accompanies that condition. When you find a patient with his pulse small and feeble, and when the surface is cold, you would not think of doing any thing that would at all depress his powers—you would not think of bleeding under such circumstances. Indeed, the condition of the patient is one in which that mode would be so manifestly improper that many persons have recommended the directly contrary treatment—the exhibition of wine, ammonia, and other stimuli. I cannot at all agree in opinion with those that recommend this course of proceeding. The state of depression is a temporary one, consequent on injury: it will pass off in a short time, and then is succeeded by a condition of re-action. In proportion as the circulation has been depressed, will be the violence of the re-action after that depression is gone off. If you were to give wine or stimuli freely during the period that the system is depressed, you would of course increase the power of re-action when it occurred. I would not say that you are not, under any circumstances, to treat the patient, at this particular period of time, on that principle. The depression of the circulation may be so

serious that the patient might be in danger of perishing from that cause; then the exhibition of weak wine and water, or of any warm fluid at hand, may answer the desired purpose. You might, under such circumstances, give it; but then you give it because you think the patient in danger from those particular symptoms; you do not give it because you think it a proper plan of treatment in all such cases. Ordinarily, then, you must leave the patient quiet until the circulation recovers, and the warmth of the surface is restored,—until the period of re-action has come on, and then you adopt the antiphlogistic treatment that I have already pointed out. In serious injuries of this kind, affecting at the time that important organ of the body, the cranium, the danger of subsequent inflammation is very considerable; you would, therefore, unless particular circumstances forbid it, in certain instances bleed the patient from the arm; give him one good single bleeding, administer active aperient medicines, so as to clear the alimentary canal, put the patient on low diet, keep him reduced and quite quiet, avoiding all external circumstances of excitement.

You must adopt further measures of this kind, according to the necessity of the case. After having once bled the patient largely, you will probably not find it necessary to have recourse to a very large loss of blood subsequently; moderate bleeding, either from the arm, or cupping at the back of the neck, or the application of leeches to the back of the head, will answer the purpose; and you are to be guided in the measures of depletion, not by the state of the sensorial symptoms, or by the state of the voluntary powers, because they will probably remain affected for a certain length of time, whatever treatment you adopt; but you must attend to the state of the pulse—you must attend to the state of the head, according to the degree of heat, or the flushing of the countenance, or other indications of a determination of blood to that part.

The state of partial insensibility is one you cannot remove by bleeding, or any other kind of treatment; it will last for a certain length of time; and you do not bleed, therefore, for the purpose of putting a stop to that symptom. If the circulation were not at all disturbed—if there were no evidence of increased action, either in the pulse or the state of the head, it might not be necessary, perhaps, to bleed at all; you would not bleed merely for the purpose of putting a stop to the state of sensorial insensibility, which particularly characterizes concussion; indeed, persons are apt, perhaps in consequence of seeing the patient remaining in this condition of insensibility for a long time, rather to err on the side of excess in antiphlogistic treatment, particularly in re-

spect to the quantity of blood to be taken.—You may certainly do mischief by persisting in the loss of blood under such circumstances. The loss of blood actually produces of itself, independent of any thing in the state of the head, a condition which will be attended with pain, and some other symptoms, similar to those which take place in the re-action after concussion. It is necessary, therefore, carefully to discriminate, by attending to the pulse and to the general state of the patient, so that you may avoid that error.

By pursuing this treatment, and carrying it on judiciously, according to the exigencies of the case, you conduct the patient safely through the state of partial insensibility, which is the consequence of concussion, and you contribute all you can do towards his entire recovery from it.

There is a question respecting the employment of blisters in a case of this kind. As long as active excitement exists about the head, I think the application of blisters is not advisable. In the more protracted period of such cases, we sometimes come to a point at which it is doubtful whether we should continue low diet or not; it is a question whether we should bleed from the arm—whether we should cup or leech, or whether we should not, in particular cases, omit these altogether. Under such doubtful circumstances we often find advantage in employing blisters, and in adopting the plan of counter-irritation, in preference to the method of direct depletion. It is chiefly in the advanced stage of the case, and under such circumstances as I have mentioned to you, that the application of blisters becomes advisable.

#### *Delirium.*

The circumstances accompanying injuries of the brain are so diversified, that it is impossible for me to consider all the particular points in detail by which they are distinguished. My object has been rather to point out to you the general principles that should regulate their treatment. There are, however, one or two circumstances to which I have still to advert. I have mentioned a certain collection of symptoms as indicative of *compression*, or *pressure*, of the brain, according to the ordinary mode of considering them; and another set as indicative of *concussion*, or injury of the brain consequent on violence, where we have no extravasation of blood, nor any of those circumstances that cause compression. Now, all the phenomena that follow injuries of the brain are not exactly to be referred to these two heads. An injury of the head is sometimes followed by a degree of disturbance, which is hardly distinguishable from a state of *delirium*. The symptoms which constitute

this will come on very speedily after the accident, so that the delirium is not, in this case, referable to a disturbed circulation in the brain, for time has not been allowed for such a disturbance to come on; it cannot be accounted for in the same manner as delirium in fever—by disturbance of the circulation within the head. I saw a case of this nature some time ago: a girl, nineteen years of age, of a very full habit, who lived in one of the paved courts in the city, was occupied in the evening in carrying in-doors some of those articles in which her father dealt, that were standing outside of the house. A young man, who lived in the neighbourhood, came behind her and lifted her up, as if he would throw her on his shoulder; she was a good deal alarmed, and gave a sudden spring, which, coinciding with his effort and intention to lift her up, carried her completely over his shoulder, and pitched her on the top of her head on the ground. She fell, therefore, with her whole weight upon the top of her head; and the fall was so violent that it cut through a beaver bonnet which she wore. She was taken up perfectly stunned, motionless, and senseless; and in this condition she remained for somewhat less than ten minutes. Immediately on her recovery a state of high delirium ensued; she screamed excessively, moaned, and threw about her body and limbs in so violent a manner that it required several persons to hold her. The gentleman who saw her found it necessary to take blood from the arm immediately, and again in the course of the night at various times. With a good deal of difficulty, caused by the violent motion of her limbs, he abstracted about sixty ounces, and contrived towards the morning to apply some leeches about the head, by which means the disturbance was in some degree subdued. But when I saw her, about the middle of the next day, she still remained delirious, and the agitation of the body and limbs was superadded to that state of the sensorium which characterizes delirium. It was necessary then, although blood had been so freely abstracted, to repeat the depletion; and as her bowels had not been relieved, a small quantity of croton oil was administered, the stomach having rejected other medicines. Three evacuations from the bowels followed, and calmed her, though the delirious state was by no means removed; it occurred at intervals. For a fortnight she was at times nearly insensible, awaking from that state, and passing into the state of delirium and agitation of the limbs which I have mentioned. Sometimes she would go on talking in a childish way, with apparently a vivid recollection of long-past events, particularly of circumstances attend-

ing her infancy. She did not completely recover from this state till the expiration of nearly a month, at the end of which time she went into the country. This patient was very freely evacuated; blood was taken repeatedly from the arm; cold was applied to the head; aperient medicines were administered; she was put upon low diet; and the antiphlogistic treatment was enforced to a considerable extent. Eventually she completely recovered. Now in this case there was no external wound.

#### *Convulsions.*

In some instances, *convulsions* follow injuries of the head. Convulsions may take place where there is a wound of the head, from the direct irritation of the brain; or they may even occur where there is no wound, and where we might infer their occurrence to that indefinite, uncertain kind of injury, which we have designated concussion. I should, however, observe to you, that formidable as the cases may appear when they assume the character either of delirium or convulsions, such cases do well, in general, under the treatment I have already particularized. It sometimes happens that symptoms of compression come on in cases of injury where there has been no external wound, or where there has been an external wound without a fracture of the skull. I speak of a case in which the patient may have been stunned at the time, may have recovered from that immediate effect of the injury, and where the symptoms of compression have come on at a greater or less interval of time from the accident. The question is, whether in such a case it would be expedient to have recourse to the operation of trephining, for the chance of relieving the patient, in case the compression should be found to arise from extravasation of blood under the dura mater, between it and the surface of the brain. I have already mentioned to you, that the seat and particular nature of an injury to the brain, where it is produced by an accident to the head, are extremely uncertain. We have no decided symptoms which enable us to say, in a certain case, that a particular description of internal injury has taken place; we have no symptoms that will enable us to say that blood is extravasated, and that it is extravasated in this, that, or the other situation. In a case, therefore, where there is no particular wound, we are totally in want of the main circumstance to guide us in the application of the trephine. We may know, perhaps, that the patient has been struck, or that he has fallen on a certain part of the head, but we can by no means safely conclude either that extravasation of blood is the cause of the symptoms, or if it be, that the effusion has taken place immediately under that part of the bone which has been

struck. To me, therefore, it seems that the perforation of the skull in such cases is not advisable. The nature of the case is too uncertain; the indication is really too precarious to induce us to undertake an operation of so serious a kind—an operation which, under other circumstances, would sometimes of itself lead to fatal consequences. I have never myself, in any instance, thought fit to undertake this exploratory kind of trephining, and I have seen no case in which it has been pursued with advantage. I do not think that I should, under any circumstances, trephine a patient so situated. At the same time there are such various circumstances attending the practice of medicine and surgery, that we cannot lay down any rule positively; and I would not therefore say that it might not possibly be expedient, in some particular cases, to make such a perforation as I have mentioned. I think, if it were at all advisable under any circumstances, it would be where there was an accident happening towards the lower and anterior part of the parietal bone, where the trunk of the vessels ramifying in the dura mater is contained in a pretty deep groove, and where we know that occasionally considerable extravasations of blood take place between the bone and the membrane.

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A Treatise on the Nature and Cure of those Diseases, either Acute or Chronic, which precede Change of Structure. By A. P. W. Philip, M.D. F.R.S. L. & E. &c.

An Inquiry concerning the Indications of Insanity. By John Conolly, M.D. Professor of Medicine in the University of London.

An Outline of the First Principles of Botany. By John Lindley, F.R.S. L.S. and G.S. Professor of Botany in the University of London.

Additions to the Second Edition of Dr. Clarke on the Influence of Climate, &c. &c.

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Remarks on the Disease called Hydrophobia: Prophylactic and Curative. By John Murray, F.S.A. F.L.S. F.H.S. F.G.S. &c. &c.

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## LECTURES ON SURGERY,

*Delivered at St. Bartholomew's Hospital,*

By WILLIAM LAWRENCE, F.R.S.

### LECTURE LXIII.

*Abscess of the Brain—Inflammation of the  
Membranes—Injuries of the Spinal Cord—  
Curvatures of the Vertebral Column.*

I HAVE already had occasion to mention to you, that the opening of the dura mater under any circumstance is not likely to be attended with relief to the patient; and I should be still less inclined to imitate the example of some surgeons, who have sought to relieve patients even by opening abscesses formed in the substance of the brain itself. We know, by research after death, that occasionally inflammation of the brain, consequent on injury, produces abscess near the part; and there are instances on record in which surgeons have attempted to relieve such cases by puncturing the brain at the seat of injury. But if the perforation of the skull under the circumstance that I have mentioned, with a view of letting out the blood extravasated under it, is little likely to be attended with success, this proceeding of opening the dura mater, or making an opening into the substance of the brain itself, for letting out matter, is still less likely to be advantageous.

The effects that I have now mentioned to you are the primary consequences of injury; but this will sometimes lead more remotely to other effects—to inflammation of the dura mater, the membrane immediately investing the brain, or of the brain itself—these affections coming on at some interval of time after the accident. The inflammation of the dura mater after a week or ten days, that of the membrane of the brain, or the brain itself, after an interval of some weeks, or even possibly of some months.

If we were to judge from the writings of Mr. Pott, we should suppose inflammation of the dura mater, proceeding to suppuration, and the formation of matter between the bone and the membrane, to be a very common consequence of blows on the head. He describes these occurrences minutely, and gives numerous cases, together with instances in which he found it necessary to perforate the cranium, in order to evacuate the matter thus formed on the external surface of the dura mater, and in which the operation was performed successfully. If I were to speak to you on this subject according to my own experience, I should say that such inflammations of the dura mater, and such suppurations between the skull and that membrane, were very rare occurrences. Mr. Pott mentions one particular circumstance as characteristic of the occurrence of this inflammation of the dura mater—that is, where there is a wound we find a change in its condition, which loses its healthy state, becomes flabby, exudes an unhealthy discharge, while the edges of it become inflamed;—if there be no wound, a puffy tumor of the scalp arises over the situation where the injury has been received; this tumor of the scalp being produced in consequence of the detachment of the pericranium of the skull on the external surface, opposite to the part where the dura mater has been detached on the inside, and where suppuration has occurred. Pain in the head comes on in this case, a flushed state of the countenance, general feverishness, a quick and hard pulse, and before the formation of matter the patient generally has rigors. At a more remote period symptoms arise indicating an affection of the head, and these are of a more or less serious kind, shewing that the brain or its membranes are suffering; the symptoms being sometimes connected with a deficiency in the powers of sensation and voluntary motion. But Mr. Pott considers the puffy tumor of the scalp formed over the part injured, as the circumstance which particularly points out the nature of

this affection. The pain and the unfavourable symptoms which mark the commencement of inflammation in this case, naturally lead to the employment of venesection and other antiphlogistic measures; and if these do not relieve the patient—if they do not put a stop to the inflammation, and prevent the formation of matter—if suppuration occur on the surface of the *dura mater*, and if the detachment of that membrane from the bone be followed by suppuration of the pericranium, and by the formation of the circumscribed puffy tumor of the scalp externally—Mr. Pott then says that you must cut down upon the part, and perforate the denuded portion of the cranium, in order to give issue to the matter.

I do not recollect that I have seen any instance in which matter has been let out from the skull under these circumstances, and therefore I suppose that the occurrence is one, now-a-days at all events, much less frequent than it must have been when Mr. Pott wrote. Should the combination of circumstances occur that he has described, I think it would be advisable to follow the mode of treatment that he has pointed out. If suppuration take place on the external surface of the *dura mater*, there can be no outlet for the matter except through the operation he advises, and if the matter be not evacuated in this way, it is likely to extend—to produce greater detachment of the *dura mater*—to keep up the inflammation of that membrane—and thus to lead to inflammation of the brain itself. When, in cases of injury to the head, the antiphlogistic treatment that I have had occasion to recommend to you generally, has been neglected in the first instance—when the patient has resumed at too early a period his ordinary occupations, whether bodily or mental—when he has imprudently taken exercise, and exposed himself to the various exciting causes of inflammation—and when he has not observed due precaution in diet, it may happen that the membrane immediately surrounding the brain, or the brain itself, or both, will become affected with inflammation, this occurrence being indicated by pain in the head—by a flushed state of the countenance and heat of the head itself; sometimes by convulsions and delirium, and sometimes by symptoms of a more serious kind, which are to be referred to the state of the sensations and voluntary powers. These symptoms going on to assume a more serious character, having the form of coma or paralysis—or complete insensibility. These circumstances indicate inflammation in the brain or its membranes, and sometimes two distinct kinds of cases are detected—an inflammation of the membrane which lines the *dura mater*, and which covers the brain externally (the *arachnoid coat*), known under the name of *arachnitis*, and inflammation of

the brain itself, termed *encephalitis*. I do not think, in general, that you will be able to distinguish clearly between these two affections; for it is doubtful, in point of fact, whether they are distinct. The *arachnoid coat* cannot be distinguished so far as disease goes from the *pia mater*, which is almost identified with it. And then, what is the *pia mater*? It consists of the blood vessels belonging to the brain, which have a peculiar arrangement in the brain, in consequence of the peculiarity of structure in that organ, and which, instead of passing directly into it, and ramifying throughout it, as vessels do in other parts of the body, are, in the first place, spread out minutely on the surface of the brain, and then enter it at all points of the surface in minute ramifications; so that to say that the brain can be inflamed without this external membrane, as it is called, but which, in point of fact, consists of expanded ramifications of vessels belonging to that organ, is to say, that the organ can be inflamed without its vessels partaking in the disease. I rather think for all practical purposes, whether of surgery or of medicine, we may put together cases of *arachnitis* and inflammation of the brain itself. We shall find in any case where the brain is inflamed, the *arachnoid membrane* is the seat of obvious vascular disturbance; or where this last is inflamed, you will not find the substance of the brain is free from the disturbance.

The occurrence of these symptoms will lead us to the employment of the most active antiphlogistic means; and here you must take blood from the arm very freely, and repeat the operation until the symptoms are completely put a stop to. I have already mentioned to you, that so far as the mere symptoms of concussion go, considered in themselves, bleeding is not a proper remedy for them. Concussion produces certain effects on the sentient and voluntary powers, which will last for a certain time, and which go off gradually, and you cannot, perhaps, materially accelerate the departure of that state either by bleeding or other antiphlogistic treatment; so that although bleeding is proper as a precautionary measure in concussion as soon as reaction takes place, you are not to go on bleeding merely on account of the symptoms of concussion. But when under this state of concussion those symptoms arise which shew the existence of inflammation in the brain and its membranes,—and in addition to other circumstances, you will be guided in a great measure by the state of the head as to heat, and by the condition of the pulse;—then you must employ the lancet and other means for the abstraction of blood very freely, and you must repeat such proceedings until you completely put a stop to those symptoms. Here you are obliged to

carry the loss of blood frequently to a very great extent; for it is only by the active employment of antiphlogistic means, and a perseverance in them for a considerable length of time, that you can subdue these symptoms of inflammation of the brain in a serious case.

The active prosecution of this kind of treatment is not only necessary to put a stop to the immediate symptoms, but also to preserve the patient from some of those subsequent effects which the inflammation would lead to if it were allowed to go on unchecked. Loss of sensation, paralysis, and an impaired state of various mental powers,—these are the effects that will be produced if the state of inflammation be allowed to go on in such instances.

#### *Injuries of the Spinal Cord.*

The spinal cord, gentlemen, with its membranous coverings, and the bony canal which contains these parts, is very analogous in respect to structure and office to the brain, and the skull which contains it; and there is a corresponding analogy in the consequences of accidents and diseases in the two cases.

The spinal cord is liable, in consequence of injury, to *compression* and to *concussion*. I have already had occasion to mention to you, in speaking of accidents (of fractures, and of dislocations of the vertebral column), that the danger of these consists in the effect which the broken or displaced spine produces upon the spinal cord. Compression of the spinal cord, in one respect, is a more serious affection than compression of the brain, because it interrupts sensation and voluntary motion in all the parts situated below the seat of injury. Now the spinal cord is also subject to concussion; and the effect of concussion is that of impairing sensation and voluntary motion either in the parts which receive the supply of nerves from the region of the cord which is immediately the seat of injury, or in all the parts that are situated below it. The spinal cord is much more completely covered externally than the brain—that is, the bony covering, and the muscles and membranes which surround it, are much thicker; so that concussion of the spinal cord is by no means such a common occurrence as that of the brain;—yet it is not very uncommon.

Some time ago a patient was brought to this hospital, and came under my care, who, I think, in consequence of an alarm of fire, jumped out of a window in the night, somewhere between twelve and twenty feet high. He came to the ground upon his legs, lighted upon his feet, and fell forwards. He was considerably injured by the fall; he was taken up and carried into the house, where he remained insensible for some hours;—but when he came to himself, it was found that he was totally unable to move his lower

limbs—they were completely paralysed. He experienced a good deal of pain in the back, and the pain shot from the back along the thighs and legs, to the feet. Yet, notwithstanding he had this pain, the power of sensation in the limbs was somewhat impaired, though, in fact, not considerably. He came to this hospital, I think, between a fortnight and three weeks after the occurrence of the accident, and at that time he laboured under the most complete paralysis of both the lower extremities; he was totally unable to raise either of them from the bed by any voluntary effort, but if one of the limbs were bent for him, he could, with a great deal of trouble and after a long time, contrive to get it straight again. Sensation at this time was perfect, and he had complete power over the muscular coat of the bladder and the sphincter of the rectum, so that these parts were not affected. Upon inquiring very accurately of those that knew the circumstances of the accident, it appeared quite clear that he came upon his feet—that he did not even fall backwards—that he did not strike the back; and therefore that the injury the spinal cord had received must have been somehow communicated through the impulse of the feet upon the ground—that there was no direct violence offered to it. His back was carefully examined, but there was no vestige of bruise or other injury—no irregularity, no reason to suppose that the vertebral column had been at all hurt. He remained in bed, and had some means used for him; these were only slight, however, as it was desirable to see what effect would be produced as to the restoration of the power of motion in the parts affected, by the natural recovery of the spinal cord. But at the end of six or seven weeks he did not seem to have made material progress, and then he had two moxas applied at the upper region of the spine, from which he derived considerable benefit; so that in a little time we placed two other moxas lower down, and from these he derived still greater relief. I think in the space of three or four months from the occurrence of the injury he had recovered pretty completely the power over the muscles of the lower extremities. He recovered, shortly after the second moxas were applied, sufficiently to walk about the ward with the use of a stick, and he was soon able to go out of the hospital. I saw him two or three times afterwards, and within three or four months after the accident the recovery might be said to be complete.

About the same time that this occurred, another patient was brought in, who had received a pretty severe blow on the lower part of the neck and the upper part of the back; some heavy body struck it. In this case there was no perceptible injury about the vertebral column—there was no evidence of any fracture, or of any injury so serious as



that. But this accident was attended not only with partial, but nearly complete paralysis of the two upper extremities; the sensation was also impaired at the same time—at least in one of them, and if I do not mistake, in both the patient often experienced very severe pain, but it was rather referrible to the muscles than to the integuments of the part. On one occasion this patient, for a short time, lost the power of expelling his urine, so that it became necessary to draw it off with a catheter; but, with that exception, there was no paralytic affection of the parts situated below the seat of injury. This patient recovered the complete power over the muscles of the upper extremities in the space of about ten weeks.

I have a patient in the hospital at the present time who suffered concussion of the spinal cord from a fall, in which he came upon his legs, so that he was not struck on the back; and in this instance the accident was attended simply with a loss of power over the muscular coat of the bladder, and he was not able to retain his urine. At the time he came to the hospital for the accident he had complete power over the lower extremities, even over the sphincter ani, but he had his water constantly running off. I had him cupped, and subsequently blistered on the loins, which means restored the power of the muscular coat of the bladder. He was so well recovered that he went out of the hospital, but I believe he was guilty of some irregularity. He came back, not with a return of the original symptoms, but with a considerably painful affection of the lower extremities, particularly one thigh, and he is under my care for that at this time; a symptom, no doubt, deriving its origin from the injury which the spinal cord received.

Baron Boyer, in his Treatise on Surgical Diseases, gives two or three instances of fatal results from accidents of this kind. He mentions one case in which paralysis of the lower extremities of the muscular coat of the bladder, and of the sphincter ani, came on in consequence of an injury upon the lumbar region of the spine, and the patient died at no great length of time after the receipt of the accident. Upon examination of the case, no fracture nor discolouration was discovered, nor any visible derangement of the structure of the spinal cord. He mentions another instance of a person exhibiting feats of strength and activity, meeting with some slight strain of his back. Paralysis of the lower extremities, and of the sphincter ani and detrusor urinæ, soon came on, and the patient ultimately died. No affection—no morbid change—was found in the spinal cord in that instance. In another case of a blow on the loins, which terminated fatally, with paralytic symptoms, at the end of about fourteen days, no effu-

sion was discovered in the lower part of the spinal canal, to a considerable extent above the injury.

The spinal cord is liable to disease, to inflammation, and to change in its consistency—such as the change which is sometimes found to take place in the brain in consequence of inflammation—the *ramollissement* of the French. This is a change which may, I believe, be the consequence of injury—particularly of some of those injuries causing concussion of the spinal cord. It will lead, of course, whether it is the result of accident or of original disease, to paralysis of the lower half of the body—to that state which has been technically called *paraplegia*, which means paralysis of the lower half of the body, as *hemiplegia* means paralysis of the lateral half.

It must be, of course, very difficult in the living state, indeed almost impossible, to determine what is the precise cause of the symptoms in a disease of this kind; therefore we can hardly ascertain the direct cause of the affection in these instances until it is too late to administer a remedy—that is, until we have an opportunity of examining the case after death; therefore we can only proceed on general principles in the treatment of affections of that kind. You are not, however, to infer that in all cases of paraplegia—that is, of paralysis of the lower half of the body, with or without paralysis of the sphincter ani and of the detrusor urinæ—that there is a serious disease of the spinal cord. There are instances in which this paralytic state arises from a condition of the spinal cord that is produced sympathetically, from a disorder or a disturbance of some kind existing in the digestive organs. I have seen several instances, not only in children, but even in adults, of paraplegia, the existence of which could not be explained by the presence of any disease in the bony covering of the spinal marrow that could be supposed to act on the cord itself; and where, by paying close attention to the state of the stomach and bowels, and principally by the employment of active aperient medicines and a steady pursuit in the use of them, the paralytic symptoms have entirely disappeared and the patient has got rid of them completely. That is a point, therefore, in this doubtful kind of case, which I should always wish you to attend to.

There are some instances in which paraplegia seems to derive its origin from disease existing in the brain—where we can trace no symptoms of disease at all in the spinal cord, but where we have evident marks of disturbance in the brain, and where, of course, the means of treatment must be directed to that organ.

#### *Curvatures of the Spine.*

There are two kinds of affection of the

vertebral column, respecting which it is necessary for me to say a few words to you, although they are merely evidences of the existence of disease of the bones, such as I have already had occasion to speak of.

In the first place, the vertebral column sometimes deviates from its straight and upright figure, in consequence of an unnaturally soft condition of the bony matter which enters into its composition. The column altogether is unnaturally soft and weak in its composition, and it therefore gives way—bends under the weight which it has to support; the disease, so far as this softness of the bone goes, being probably the same, or at all events nearly similar to that state which I have had occasion to describe to you under the name of rachitis, or rickets, in the bony structure generally. You are of course aware that the vertebral column sustains entirely the weight of the head, which rests perpendicularly on it above; and that the weight of the upper extremities are also in a great measure supported on the spine. A certain degree, therefore, of strength, solidity, and resistance in the bony fabric of the column is necessary, to enable it to sustain the weight of the head and upper limbs. If the bones do not possess that degree of solidity—if they be preternaturally soft—they will bend under the weight they have to support, instead of being straight they will become curved or crooked.

The change in this state is not attended with any thing like a condition of inflammation; there is no actual disorganization of the bony structure of any part; it is merely a kind of change in which the solidity—the power of resistance of the bony tissue—is diminished. If you look at the external configuration of the bones of the vertebræ under such circumstances, they appear perfect. The vertebræ, however, as this affection goes on, become very considerably changed in their figure; for you will immediately observe that when a curve of this kind is made in the spine, the bodies of the vertebræ in the concavity of the curve must be much narrower than those in the convexity; and the difference is so striking, that the bodies of the vertebræ will be two or three times as deep upon the convexity of the curve as upon the concavity. This alteration in the bodies of the vertebræ also affects all other parts connected with them, particularly the ribs; so that the deformity which the chest undergoes in this case, is the consequence of a change of figure in the spine. In some cases the deformity is so great that the bodies of the dorsal vertebræ are actually in contact with the ribs towards their angles, throughout a considerable extent of the back; and of course there must be a considerable change of the situation of the parts contained within the cavity of the chest. Now when the vertebræ bend in this

way, you never find a *single* turn only of the vertebral column where it is weakened in the loins; so that if the vertebral column bend towards the right, it must necessarily be followed by a bending of the spine higher up towards the left side, in order to preserve the line of gravity of the body. If the vertebral column were bent altogether towards the right, the weight of the head and the upper parts of the body would not be supported at all. Thus the existence of a curve in one part of the spine necessarily carries with it a deviation at another point; and you consequently find two, three, or four curvatures in various parts. The effect of these accommodating each other is, that however irregular the spine may be, the line of gravity is still kept up in a direct line from the upper part, through the pelvis at the lower extremity of the column.

The curvature which takes place in consequence of this condition of the spinal column is on the side, and constitutes what is commonly called *lateral curvature of the spine*, from the circumstance that the incurvations are toward the side, so that sometimes the spine takes pretty regularly the form of the letter S instead of the natural straight line. This is an affection which takes place in young persons. It occurs during the period that the body is growing, and at the time of puberty, when the parts acquire their full strength and solidity; the bones then become firm and strong; they lose their softness or ricketty state; they acquire the natural firmness belonging to the osseous structure; and, consequently, the part remains permanently in the deformed and unnatural shape which it has acquired in consequence of disease.

This is not incompatible with the existence of considerable vigour and strength in other respects after the age of puberty has arrived; so that sometimes you find a very singular contrast between the incurvation and the consequent deformity of the trunk, and the natural length, size, and full vigour of the limbs of the individual. In a deformed trunk of this kind, you perhaps have the limbs of the regular length and of the full size.

The subjects in whom this deformity takes place are generally those who are naturally of a weak constitution, and are often persons in whom a scrofulous disposition is obvious. This natural disposition to deformity in the spinal column is increased by sedentary occupations, by the neglect of exercise, and by any of those circumstances which act unfavourably on the general system during the period of growth.

The natural remedy for this affection consists in placing the patient under all the circumstances that are most favourable to general health and strength; but the efficacy of the treatment will depend a good deal upon

the time at which we have the opportunity of instituting it. If we see a case of this kind when the deviation from the straight figure of the spine is just beginning, when it has only advanced a little, we may be able, by adopting the general management that I shall mention to you, to put a stop to the affection; but if we do not see it until the deformity has considerably advanced, more particularly if we do not see it until the bones have acquired their settled form at the age of puberty, we have no means whatever of remedying it. You will understand that you cannot alter the configuration of the bony structure when it has attained its hardened state. The great object, then, will be to strengthen the constitution. The patient should reside in a good air; he should exercise the frame; employ all the means of calling into action the muscles of the body generally. There are various modes in which this may be accomplished. It is often necessary to point out means of this kind in cases that we are consulted about, this being frequently the case with young females; for I must observe to you that this deformity is much more common in the female than in the male sex; and I fancy this arises in consequence of the greater care which is taken to preserve the straight and proper figure of the frame in the female than the male, that care being in general not of a very judicious kind. The truth is, that the preservation of the proper figure of the human frame does not require any great attention on our part—it is pretty well secured by nature; and if we do nothing in the care of young children that is calculated to diminish the powers of the system generally, or to lead to deformity, nature, I believe, will take good enough care of herself that the body shall grow up without deformity. Boys are allowed to take active exercise, to be a good deal in the open air, to exercise their limbs and muscles, to bring them all into action, and thus they acquire a hardness and vigour of frame; while girls being kept much more within doors—not being allowed to engage in those active pursuits to which boys are accustomed; being confined often a good deal to sedentary occupations in their education, such as reading, music, drawing, needlework, and so forth, they become enfeebled; in point of fact, they are brought into a state in which this curvature of the spine will very easily take place. In this respect you should allow a girl, where curvature is threatened, to have the same kinds of exercise which a boy is allowed; they must engage in active pursuits, and employ, in fact, all the means that are calculated for bringing into full exercise the muscles of all parts of the body, so as to invigorate, as much as possible, the frame generally. With respect to young girls, there are various modes of exercise in which they may be employed in addition to

those which are more common, if left to themselves: the skipping-rope, dumb-bells, using their arms in turning a wheel, carrying a weight upon their head. This latter plan has been recommended of itself as a remedy for the disease, and certainly it is not an injudicious one: carrying a bag of sand, for instance, on the head, balancing it with the hand, and gradually increasing the weight, and walking about with this weight upon the head, produces such an exertion of the muscles of the spine as tends to keep the head properly balanced, and has a good effect in cases of this kind. It is worth while in these cases to attend very carefully to the condition of the skin; tepid bathing, warm bathing; and in the warm parts of the year, when this is not so much resorted to, an exchange of it for the employment of cold bathing, is advantageous; and which, together with the shower bath, are means of invigorating the system that are generally very useful. I need not enter into those considerations of diet which are proper in cases of this kind, as the general principles that I have already explained are applicable; and I can only observe, with respect to medicines, that nothing more is required in this instance than to regulate the state of the digestive organs, if they require it.

The plan of treatment, therefore, is one, you will perceive, which is directed to strengthen the frame generally; and we should expect to remove a slight deformity if it has already occurred, and to prevent the progress of that deformity by these means, and not by any local measures directed to the spine.

It may be a question in this case how far our object can be assisted by the employment of mechanical means, that are calculated to take off from the spine the weight of the head and the upper extremities; for such purpose have been devised instruments resting upon the pelvis, with a steel or iron kind of instrument passing round the body as a support, and a perpendicular stem rising from it above the head, so that the head can be suspended upon the upper part of the perpendicular stem; and other means adapted to support the weight of the shoulders have also been recommended. We are, however, to consider in this case that the skeleton is really too weak for the support of those limbs which it has naturally to sustain, and therefore it is very ill calculated to bear the additional burden of cumbersome machinery; so that upon the whole I am not inclined myself to have recourse to measures of that kind. When the affection is incipient, when it has not made much progress, I am confident, from repeated experience, that the general means I have pointed out to you will be sufficient, and will be much the best calculated to prevent the progress of the affection, and that no assistance from machinery will then be wanted.



If the disease have proceeded farther, really machinery will not help us—it will not be at all able to remove the effects that have been produced. It may, however, in conjunction with the general course of proceeding that I have pointed out to you, be advisable to take off from the spine, during a certain part of the day, the weight of the trunk and upper extremities, by means of the horizontal position. It will be well that the patient should lie upon a couch or sofa for perhaps two, three, or four hours, in the course of the day, this recumbency taking place at different intervals, and between the periods of active exertion that I have mentioned; and if young subjects exert themselves pretty actively they will not be at all disinclined to lie down occasionally in the course of the day. It is by no means necessary that a patient should lie upon what is often used for this purpose—an inclined plane, formed of board: an ordinary sofa or couch will answer the purpose very well.

I should mention further to you that until the symptoms which indicate this deformity are put a stop to—until the frame has completely recovered—those parts of education which require close and sedentary attention should in a great measure be suspended: indeed, until this is accomplished, the strengthening of the body should be the chief object in view with the parents, and the branches of education which require confinement and exertion of the mind should really be postponed until the more important physical point is secured. In younger girls, in particular, the nature of those pursuits which they have to follow in their education—the attention to many of those accomplishments which they have to acquire—keep them constantly in-doors and in a sitting posture; and I imagine that it is to this circumstance particularly, in conjunction with the neglect of more active sports in the case of the female, that the greater number of deformities of the spine in the female, as compared with the male, are to be ascribed.

#### OBSERVATIONS,

##### CRITICAL AND EXPLANATORY,

*On some of the most approved Methods*

FOR THE

#### DETECTION OF ARSENIC AND ITS COMPOUNDS IN ANIMALIZED FLUIDS.

By ROBERT VENABLES, M.B.

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It would naturally occur to most persons unacquainted with the difficulties

which embarrass medico-legal inquiries, that the labours of Orfila and others in this department had left but little or nothing more for the toxicologist to achieve. Such opinions, however, are the surest mark of inexperience, and of the total want of practical knowledge. It was during a course of experiments, instituted some time since, and subsequently repeated at various intervals, with a view to determine the relative value of the different methods hitherto in use, that I became convinced that none of the plans usually recommended were available or applicable in the generality of cases. While engaged in this inquiry, the late very valuable work of Dr. Christison made its appearance, and I feel in justice bound to declare that it bears away the palm from all other competitors.

The characters of arsenic are so clearly established, and so characteristic, that no difficulty can occur to the most clumsy or the rudest analyser in the case of the unadulterated substance. The difficulties which embarrass and perplex the toxicologist arise from the action of vegeto-animal matters upon the poison. First, they render the poison insoluble, and thus remove it from the sphere of the chemical re-agencies most commonly adopted; secondly, the animal matter remaining in solution prevents, impedes, or perverts the characteristic re-action; thirdly, the re-agent precipitates the animal matter in combination with the arsenic, giving rise to a subsequent part of the process to results so obscured as to render the presence of arsenic a matter of doubt and uncertainty in the hands of those unaccustomed to, or, rather, not well versed in inquiries of this description.

It had occurred to me that chlorine might be rendered so far subservient as to destroy the colour and neutralize the agency of animal and vegetable matter, and to clearly develop the characteristic re-agency; and when the arsenic is abundant, this might be the case to a limited extent. Neither Orfila, who was the first to propose chlorine, nor Dr. Christison, who has examined its inadequacy more at length, seem to me to be aware of the fact that chlorine peroxidizes arsenious acid, and converts it into arsenic acid. Were chlorine otherwise unobjectionable, this would be a valuable property; for while re-

moving the perplexities arising from the presence of animal and vegetable matters, it would at the same time be converting the less soluble preparations of arsenic into one of infinitely greater solubility.

Chlorine in some cases answers remarkably well; but in animal mixtures, the animal matter is neither removed, nor its action wholly destroyed, and often but little impeded; and hence the arsenic is either retained in solution, or, as more frequently happens, in mechanical suspension.

The best method of using chlorine is to pass a stream of chlorine gas into the suspected fluid, preventing its escape by mechanical pressure till the fluid is thoroughly impregnated with chlorine, with which it is to be well agitated. It is next to be filtered, and the filtered liquor well boiled, to expel the superabundant chlorine. A clear and nearly colourless fluid is the result. If a stick of lunar caustic be now applied to the surface, a brick-red precipitate of *arseniate* of silver falls down, intermixed with some chloride of the same metal; not, however, in sufficient quantity to observe the result, unless muriate of soda be present in considerable superabundance. If the precipitate be collected, dried, and heated in a tube, arsenious acid sublimes, occupying a cooler portion of the tube in the form of a ring. As a further verification, the portion of the tube occupied by the arsenious acid is to be separated by the application of the file, both above and below the ring: this portion is to be reduced to powder, and mixed with recently ignited charcoal, as directed by Dr. Christison for simple arsenious acid; the whole is to be introduced carefully into an appropriate tube, and cautiously heated by the flame of the spirit lamp\*, when metallic arsenic sublimes.

I have tried to render the decolourising process by chlorine subservient to the precipitation of arsenic by sulphuretted hydrogen; but as it occasionally fails, in consequence of the animal matter being overabundant, and thus preventing the perfect precipitation and subsidence of the sulphuret of arsenic, it is not a method of universal

or unlimited application. When resorted to, the following is the best plan:—

The suspected fluid is to be thoroughly impregnated with chlorine, as already directed. It is to be filtered and well boiled, to expel the excess of chlorine. It will be found to possess an acid re-agency, in consequence of the formation of muriatic acid, owing probably to the decomposition of water. The acid is to be neutralized by a sufficient addition of caustic potass, which should be added in slight excess. It is now to be re-acidulated by a slight excess of acetic acid, when a current of sulphuretted hydrogen being passed through the mixture will precipitate sulphuret of arsenic, unless the proportion of arsenic be very small, and the animal matter very abundant, in which case the arsenic will be retained in mechanical suspension\*. I have sometimes succeeded in throwing down the sulphuret of arsenic by the following method, when it would not subside in any other way. The plan consists in re-dissolving the sulphuret by a slight excess of ammonia, and re-precipitating by acetic acid in excess. The sulphuret becoming thus evolved rapidly, and in greater quantity, subsides at once, before the animal matter can exert its suspending power. It is essential, when the precipitate is in very small quantity, that it should subside, otherwise it cannot be collected, or if collected it will be so mixed with the torn-off fibres of the filter, that the subsequent decomposition of the sulphuret, and the evolution of the metal, will be either prevented or so obscured as to render the result equivocal. However, even this process sometimes fails altogether, and therefore chlorine does not appear to be suited to every possible contingency†.

The next method is, to throw down the animal matter in combination with a metallic oxide. I have tried a soluble salt of lead with this view; but in order to insure success it requires the greatest care and attention, and even then it

\* Of course I presume the reader aware of the solvent power of a great excess of sulphuretted hydrogen, and that it is occasionally necessary to expel this excess by boiling the fluid.

† That the action of chlorine may be understood—if a simple solution of arsenious acid in water be added to one of chlorine in the same menstruum, and that the mixed solutions be boiled to expel the excess of chlorine, on applying a stick of lunar caustic, a brick-red precipitate of arseniate of silver falls down.

\* For more specific directions upon the various methods, manipulations, &c. and their adaptation to the different purposes, the reader is referred to Dr. Christison's interesting volume on Poisons.

often happens that the result is obscure. This may in some cases be owing to the impurity of the officials in general use, but as they are the re-agents to which the generality of operators will be obliged to have recourse, I consider it superfluous to dwell upon a process which as yet I have not been able to perfect or complete.

Dr. Christison proposes to throw down the animal matter in combination with the oxide of silver. This appears to me the most effectual as well as the most manageable of all the methods I have tried, and this, perhaps, will be deemed a sufficient apology for its introduction here. His plan is as follows:

Having effected the solution by boiling with distilled water, which, if well conducted, takes up all the arsenic, the solution is to be passed through a gauze filter, to separate the coarser particles, when it is to be filtered through paper. If necessary to expedite the filtering, a little potass may be added. Acetic acid will now often coagulate and remove a sufficiency of the animal matters to enable the process to proceed. This is ascertained by adding a little ammoniacet of silver to a portion set aside for a trial test. If the characteristic re-agency is not clearly developed, then it is necessary to render the fluid neutral, or feebly alkaline. It is next to be acidulated with a small proportion of muriatic acid. Nitrate of silver is now to be added till precipitation ceases, or in other words, till the metallic salt is in slight excess. The excess of nitrate of silver is to be thrown down by muriate of soda or common salt\*: it is to be finally filtered, when a clear transparent, and for the most part, colourless fluid, passes through. This will be found to possess an acid re-agency, arising from a portion of the nitric acid of the nitrate being set at liberty through the action of the animal matter on the salt. Therefore this acidity should be neutralized by a slight excess of potass. Lastly, it should be acidulated with acetic acid; as alkali, in excess, would, by retaining the sulphuret of arsenic in so-

lution, prevent its precipitation. A current of sulphuretted hydrogen is to be passed through the fluid so prepared during twenty minutes or half an hour, when sulphuret of arsenic mostly subsides. It sometimes happens, even in this case, that when the quantity of arsenic is small in proportion to the animal matter, or that the specific gravity of the fluid is very great, that the sulphuret remains suspended. It may be thrown down by re-dissolving by ammonia, and re-precipitating by acetic acid, as before advised\*.

One of the principal sources of this suspending power, the inconvenience from which none but those who have experienced it can duly appreciate, is casein, for it mostly happens when milk forms a large proportion of the fluids. This may be in a great measure removed by a trifling variation in the mode of conducting the process. After having passed the fluid through the gauze filter, to separate the coarse particles, let the filtered portion be acidulated with acetic acid, returned to the flask, and boiled for a few minutes. The acetic acid separates the casein more effectually at this temperature than when cold. Or the filtered fluid may be returned to the flask re-boiled, and then acetic acid dropped in to coagulate the casein. It should then be allowed to cool, and thrown on the filter. In this way there is generally less embarrassment at any subsequent period of the process, and much less inconvenience from animal empyreuma. However, in strongly animalized fluids, I have never succeeded in perfectly removing the animal matter; still, if the above process be carefully conducted, no great inconvenience will be experienced in reducing the sulphuret. That the animal matter remains to a certain extent is inferred from the fact, that after the precipitation of the excess of nitrate of silver by muriate of soda, on adding caustic potass to neutralize the nitric acid, a brownish colour is often struck, or the colour is deepened, or a light, flocculent, gelatinous-looking precipitate is observed, owing, no doubt, to the action of the fixed alkali on the vegeto-animal matters in the solution. If this should prove abundant, the fluid should be again filtered, and then acidulated with acetic acid. But if the

\* The fluid, if acid, is first to be rendered feebly alkaline (we know not what the acid may be), and if remaining it might embarrass a subsequent part of the process, by precipitating sulphur; it is then acidulated with hydrochloric acid, to prevent double decomposition, from the formation and presence of arseniate of potass: on adding nitrate of silver, the muriatic acid is thrown down and removed by the filtering.

\* I of course here presume the fluid to have been heated, to expel the superabundant sulphuretted hydrogen.



colour be merely deepened with but a slight opacity, the acidulation with acetic acid removes the opacity, and restores the former colourless transparency. Lastly, the sulphuret is to be collected, dried, mixed with freshly-prepared black flag, and reduced in an appropriate tube, for the conducting of which ample directions are to be found in Dr. Christison's work, already alluded to.

This process is limited entirely to the cases in which the poison is in the form of arsenious acid, or a soluble arsenite. If it should have been a soluble arseniate, or the arsenic acid itself, the second part of Dr. Christison's process would be inapplicable, because nitrate of silver is decomposed by arsenic acid, arseniate of silver being precipitated. This inconvenience does not attend the method by chlorine. If nitrate of silver be added to a mixed solution of chlorine and arsenious acid till precipitation ceases, sulphuretted hydrogen will not separate a particle of sulphuret of arsenic from the filtered fluid.

The only other process which it is necessary to notice is that of Orfila: all the others are so complicated and so unmanageable, except in the hands of the experienced, as to be wholly unavailable to general purposes. Orfila directs the destruction of the animal matter by nitric acid. The suspected solution is to be boiled with nitric acid. The excess of nitric acid is to be neutralized by potass. Hydrochloric (muriatic) acid is next to be added in slight excess. Next pour in sulphuretted hydrogen water, boil, and allow the precipitate to subside. The solution is next to be filtered; after which the sulphuret which remains on the filter, mixed with sulphur thrown down by the muriatic acid, is to be washed through by the affusion of diluted ammonia. It is now to be re-precipitated by muriatic acid\*.

This process has the advantage of being applicable to arsenic acid as well as the arsenious; but as conducted by Orfila's process, it is complicated, troublesome, and not suited to general use. The generality of analysers will find it difficult to apportion the quantity of nitric acid to the object required, and either too much or too little will be used. Too much increases the specific gravity by the forma-

tion of an overabundance of nitric acid; too little leaves animal matter remaining. In this process, I believe, the arsenious is converted into arsenic acid. I have found the following modification well suited.

Boil the suspected fluid with a sufficient quantity of nitric acid, filter, and neutralize with a slight excess of potass. Lastly, acidulate with acetic acid, and pass through the prepared fluid a current of sulphuretted hydrogen\*; separate and dry the precipitated sulphuret, and reduce it. This is a very delicate process, very manageable, and affords a sulphuret not much embarrassed with animal empyreuma. It is also applicable to arsenic acid and its compounds.

From a number of trials, I can confirm the assertions of Dr. Christison, that the liquid tests are mostly fallacious, and not at all to be depended on. Were I on a jury, I should pay but little attention to evidence by the liquid tests, where arsenic was found in the stomach, unless the quantity was abundant and the precipitates subsequently reduced. But a very careful and attentive review of the whole question convinces me of the correctness of my former opinion†, that inquiries of this nature should be entirely confided to practised persons. Nor is it in the moment of emergency that the analyst should commence experimenting, as often happens, to acquire the necessary tact. A comparative experiment is always requisite to obviate the objection as to the source of the arsenic, especially when the quantity is minute; because, without such a precaution, it might be a question whether the arsenic, when in very minute quantity, was not derived from the impurity, or rather the adulteration, of the chemicals. It will, therefore, always be prudent for the medical jurist to institute a similar experiment upon a portion of the water used for the solution of the arsenic, &c. in order that he may satisfactorily refute any objections of the description just noticed. But I should entertain strong doubts as to the competency of an experimenter who

\* The best plan of procuring sulphuretted hydrogen is to mix two parts, by weight, of iron filings with one of sulphur, introduce the mixture into a flat-bottomed bottle, and moisten so as to form a paste; place it by the side of a fire. In less than twelve hours it is fit for use. Diluted sulphuric acid disengages abundance of gas: a cork perforated by a bent tube should be fitted to the bottle.

\* The sulphuret of course should be reduced, to complete the process.

† Med. and Phys. Journal, Dec. 1826.

should institute them to determine the presence of arsenic by a comparison of the results on the suspected with those on the uncontaminated solution. Indeed it appears to me that the subject is one worthy the consideration of the legislature, and that competent individuals should be selected, whose duty it should be to aid in all such judicial inquiries in the districts to which they were appointed.

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## STATE OF THE PROFESSION—THE GENERAL PRACTITIONER.

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*To the Editor of the London Medical  
Gazette.*

SIR,

IT is not uncommon to hear a raw licentiate of the Company of Apothecaries thus discourse:—"Really! our education is now so good, that we must supersede the physicians ere long. In former days, when the instruction of the general practitioner was limited by a counter in a country village, the physician might be necessary. But since every medical man now completes his education in a metropolis, and passes a rigid examination into his acquirements, we are become as skilled as the physicians." This silly boasting they have learned from their great Apollo. We should have thought that they might long since have deemed his oracles ridiculous, and his prophecies false, but the history of Joanna Southcote's disciples is present to our mind. Her very dropsy was proved by an examination after death; her utero-gestation of Shiloh was *seen* to be a lie; yet her worshippers adore her still. "A grain of impudence will fetch more in the market than twelve bushels of modesty." "Hardy assertions, loud demands for credence, with promises of advancement to worshippers of some new light, have been of frequent occurrence in the history of the world."

If there ever be utility in the division of labour, medical science especially demands it. He can know but lamentably little of his art, or is desperately conceited of his own prowess, who imagines that any one, however intelligent

and studious himself—however extensive his practice—however prolonged his indefatigable life, can possibly become a master of the whole science of medicine—can become the *complete* physician, and surgeon, and pharmacist, and midwife. Let him enumerate the varied sciences subsidiary to the medical, and yet essential—anatomy, botany, chemistry, and the many other subjects taught in the schools of physic; and then judge whether the most laborious student can master, in the philosophical sense of the word, any one of them?

Has he become, at the age of two-and-twenty, a perfect proficient? If he has not as yet mastered these multifarious sciences, although his years have been wholly devoted to study, how is he, in future, under the avocations of time-consuming practice, to find leisure for further improvement, if he persist to give equal attention to all the objects of medical learning? To the great father of medicine it did not seem so easy a matter to acquire professional knowledge and skill; and if those self-satisfied persons would learn by heart his first aphorism, and repeat it to themselves and their followers every day, possibly they might become wiser and less ridiculous:—

"Life is short, the art is long, occasion sudden, to make experiments dangerous, judgment difficult."—*Sprengel's Aph. Hipp.*

"At si," said the learned Martin Lister, "*ars medica illis temporibus longa fuit, quid ea nostris hominibus videbitur? quorum scilicet industriâ tanta incrementa ex novis inventis adjecta sint.*"

"Doctrinæ compendium in aphorismis constituit Hippocrates, ut *saniores* quique in omni seculo venturo, *sua quoque* symbola adjicerent. . . . Recte longam illam artem appellavit, quæ non nisi temporis *infiniti* partus esset futurus."

It is high time to undeceive those novices who have been deluded into the idea, that the division of labour is a superfluous arrangement in our profession, whilst it is found to be necessary in every other. In the art of war, a commander makes use of the various acquirements of professors of their respective sciences; but where has one been found, himself technically cognizant of every branch? The engineer and artillery, the medical and

commissariat departments, each demands specific knowledge and acquisitions. What time would even the active and inquiring hero of our days and country have had to learn every subordinate art, if this had been essential to his success and his glory? What would the profession of the law, in this or any civilized country, be, if its members were all general practitioners? How different from such inflated arrogance is the sentiment of the solicitors—the general practitioners of law? They rest contented with an axiom which no wise man ever disputed:—

*Non omnia possumus omnes.*

They cast not calumny and contempt on the practitioners in their profession who limit themselves to one department. They are not too vain to defer to the opinion of any learned man, who has confined his studies and his practice to a particular range of objects.

I wish by no means to underrate the character and importance of the medical general practitioner. We are a body of men who exist because the wants of society have raised us up. The pure practitioner of surgery, or of obstetrics, can subsist only in a populous city. The physician, indeed, earns his bread in the country; but there is room for one physician only, where there may be twenty general practitioners. Neither would I undervalue the literary labours of authors in this latter class: but I think that no man acquainted with the history of medical literature, will deny that it is mainly indebted to the division of labour. Certainly many able works have been penned by surgeon-apothecaries. Peace to their manes! Those scientific men lived before the era of pretended reform; they wished from their heart to advance science, diligently and humbly, as becomes true learning, working in quietude and peace; not puffing themselves, but trusting their fame to a discriminating public—a professional public, able to judge of professional pretensions—not a promiscuous public, which, in any scientific disputation, is an incompetent arbitrator, and on medical topics is eminently worthless and ignorant.

“I wish,” said Ingram, “to prevent the surgeon’s keeping a private shop, and vending of medicines. The apothecary should be debarred his

pocket instruments, lancets, officiating in surgery, and having a laboratory. The druggist should not make up any prescriptions, and the physician be confined to prescribing, and leave midwifery to the surgeon, whose business it most certainly is.” “Then every professor, being sure of acting (when occasion required) in their several departments, would be more attentive to the study of their particular occupation than to gain a superficial knowledge of the various branches of the art.”

This is sound and salutary advice; and although it cannot be carried into universal effect, yet the principle which it involves—the division of labour—should never be forgotten. The mass of members in every profession are men of common capacities; they are not, like the admirable Crichton of former days, nor the self-elected Coryphæus of the general practitioners in these, able to dispute *de omnibus rebus et quibusdam aliis*. This accomplished man forgets his own immense superiority, and that he is urging lesser men to feats which only a genius like himself is able to perform. *Quo quisque est solertior ingeniosior, hoc docet iracundius et laboriosius.*

It is allowed on all sides, that the education of students of the art of medicine should be to a certain extent similar; that the future physician should learn anatomy, and the future surgeon medicine and its tributary sciences. Yet, from the former, a less degree of anatomical skill is demanded; and the latter needs not cultivate with equal assiduity the purely medical sciences. But when the period of study in the schools is past, and the learner is merged in the practitioner, common sense informs us that, in the boundless range of professional objects, he who would add to our stock of knowledge must, more or less, confine his endeavours within limits prescribed by the brevity of life, the distractions of practice, and the feebleness of the human mind; and of this humble yet truly philosophic character some will ever be found. If it were possible that the malignant stupidity of the generalizers should succeed in its aim, and the nominal distinctions of our professional members be abolished, still, in point of fact, matters would remain as they are. If we were all *Misters* or all *Doctors* in name, different walks of practice would continue to be



selected by different men; the learned practitioner in medical cases and the dexterous operator would still obtain wealth and distinction.

Besides the grand reason for the present distinctions in our profession—the division of labour—there is another of considerable force, and interesting to the community at large. The public has a holdfast on the pretensions of the physician and the pure surgeon, whilst the apothecary can elude its grasp. The two former prescribe,—their *literæ scriptæ manent*; they remain in the hands of the patient or of his friends, or of the druggist; but the man who dispenses his own drugs has, at all events, the means of concealing their nature and his own knowledge of disease. If he is a sly fellow (and there are sly fellows among the apothecaries), it is plain he may baffle the scrutiny of others who may desire or demand to know the plan of treatment he has adopted in any particular case. But a prescription is an open way of proceeding, and it defies suspicion and calumny. The public will not manifest such want of sense as to surrender this great security which they enjoy now, for the qualifications of some of their inmedical men. I am not to be told that this precaution is superfluous. I have often witnessed advantage taken of the obscurity in which some branches of practice are conducted. I have known an obstetrician take unto himself all the credit of deliveries effected by nature alone. Nay more: I have known men obtain extensive and predominant obstetric practice, through a system of such deceit regularly continued year after year, although, in cases of difficulty, they were ignorant of the rules of their art. They possess only the qualifications of an ordinary midwife, the capacity of sitting still and chattering nonsense to the patient. Yet they manœuvre to obtain obstetric cases; they succeed in their manœuvres, and they obtain the fame and the fees of “very clever surgeons in the lying-in room.”

In the country—at all events in the county where this is penned—it is a common thing for a surgeon to call on a family freshly arrived to reside in his neighbourhood, and *solicit* their custom;—this petitioner, forsooth, not being in any way exceptionable as to education nor acquirements; a veritable

member of the college and the hall! *I have known* such a person to pay his devoir, and say, “I am in the habit, madam, of attending the *genteel* families in this part of the county, and I am bold to say I have given satisfaction; I hope I may reckon on your patronage;”—and what is still more surprising, such a man is received—he obtains his suit; whereas a novice in the world would think that the English blood would be up; that the bell would be rung, and the servant ordered to open the door for this person, and to be more cautious in future in the introduction of beggars. The fact is, mendicity is, was, and will be, a good trade. “Though he will not rise and give him, because he is his friend, yet, *because of his importunity*, he will rise and give him as many as he needeth.”

I live in a provincial town of some magnitude, and I cannot help laughing in my sleeve when I witness the haste which some of the general practitioners evince to call on newly-married persons; on families which they would not admit to be of equal rank with their own—which they would not *afterwards* visit; but which they hope to secure by this stratagem. Perhaps the wife of “the doctor” alone may call on some shopkeeper, bringing an apology for the absence of her husband, who, with all his desire “to conquer,” will not “stoop” so low—“I am sorry Mr. W. has been prevented calling with me, but he was this morning sent for to Lady Anne.”

A SURGEON, APOTHECARY, AND  
MAN-MIDWIFE\*.

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#### TAX ON THOSE ENTERING THE MEDICAL PROFESSION.

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*To the Editor of the London Medical  
Gazette.*

SIR,

I TRUST that I have too much diffidence to persevere in any opinion of my own, after being shown that it is erroneous; but before hazarding an opinion, I al-

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\* We trust our correspondent will excuse us for having omitted a few expressions which appeared to us liable to misconstruction. We know not who the writer is, but had he not, in a previous paper, been equally severe upon the physicians, we should have been induced to doubt the candour of the signature he has chosen.—E. G.

ways take the trouble thoroughly to investigate its merits, and having done so, am not to be induced to depart from it by mere assertion, unsupported by argument, or by that species of flowery declamation which substitutes popular prejudice for logical deduction. My last appears to have called forth a spirit-stirring epistle in the noble cause of liberty; but it is unfortunately so vaguely worded, that it is exceedingly difficult to discover whether the author really differs from myself. From all I can collect about "youths of noble, or at least honourable birth"—"politeness, talent, &c. being connected with an abundance of wealth"—"restricting the admission to men only of substantial means"—"ample fortune"—"gold"—"rational freedom," &c. &c. at its commencement; and "the inconsistency of fortune"—"the liveliness of hope"—"the progress of the humblest individual," &c. &c. at its conclusion; I can only divine that its author fancies he differs from me, whereas there is scarcely a single condemnatory sentence in his whole production of which I do not highly approve.

My first position consisted in stating, that there were more in the profession than was of advantage either to themselves or the public. Does "Mediculus" intend to dispute this assertion? I then proposed, as a remedy for this evil, to levy a duty of small amount on those entering on the study of medicine—such a fine as should only prevent those from embarking in it who had not a reasonable prospect of succeeding in it. Comparison alone gives import to the words, rich and poor: they who earn a livelihood by the labour of their hands, consider those who earn a subsistence without manual exertion as rich; the man who keeps two servants, thinks his neighbour who has four rich. Is it to be said, then, that 100*l.* levied on persons entering our profession would restrict the admission to men of substantial means? If a journeyman were discussing the subject, I should expect him to make such an observation; but as society is at present constituted, it is scarcely possible (except in a few instances of failure in other businesses) that they who have had the means of obtaining such an education as would fit them for pursuits of an intellectual nature, should find any difficulty in paying this duty.

Great mischief arises from this, that persons are not aware of the expenses which attend a medical pupil, still less do they look to the preliminary requisites: had they to pay for hearing lectures, walking hospitals, dissections, &c. &c. *in limine*—had they to undergo an examination to ascertain if they had a sufficiency of knowledge to capacitate them for the study of a liberal science—then would they perceive how preposterous their ideas were—how incompetent their pecuniary resources and their mental acquirements to the successful cultivation of medicine. My proposition would save them the vexation of discerning these facts too late to avoid their consequences. To assert that it would exclude from the profession all but persons of substantial means, is almost as absurd as to impute to it the design of making peers and marquises medical men; the only difference being, that the one is an indefinite, the other a definite exaggeration. In fine, let those who are averse to it remember, that in the law, as was stated in the first letter on this subject, a similar regulation has been attended with the best result.

I have the honour to be, Sir,

Your most obedient servant,

A SURGEON AND APOTHECARY.

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#### REMARKS

ON

#### DR. BALLINGALL'S INTRODUCTORY LECTURES.

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[We have received the following from a Correspondent in Edinburgh.]

A PAPER recently published in a contemporary journal is rather an attack upon the Professorship of Military Surgery, upon the public bodies which have patronized it, and upon the individual holding it, than a review of Dr. Ballingall's Lectures. The writer of this article founds much of his humour (such as it is) on the assumption that the Professorship of Military Surgery was instituted at the *close* of the war; whereas it is well known, and Dr. Ballingall has expressly stated the fact, *totidem verbis*, that it was instituted "soon after the commencement

of the late war." We believe, indeed, that until lately it was not taught in the University of Edinburgh as a separate class; but this is a circumstance for which the present Professor is nowise responsible.

The writer proceeds upon the supposition that an attendance upon this class is compulsory upon the students of the Edinburgh school; whereas, if he had read the regulations of that school, he would have found that such attendance is not compulsory, either upon the candidate for a doctor's degree or for a surgeon's diploma. The partial protection given to this class by the *Senatus Academicus*, consists in an option on the part of the student to attend this class in preference to some others which are specified, provided he shall think it more suitable to his purposes. "*Duabus saltem ex sequentibus etiam disciplinis (a seipso, prout sibi maxime conveniat, eligendis)* in hac aut alia Academia supra definita, se operam dedisse, scilicet, anatomiae practicae, historiae naturali, medicinae legali, chirurgiae clinicæ, chirurgiæ militari, per curriculum trium saltem mensium."

The encouragement held out to the chair of Military Surgery by the recent regulations of the Edinburgh College of Surgeons, was given expressly as a boon to the *student*, not to the Professor. It consists in an option given to the student, if he shall see fit, to attend a course of military surgery in preference to a *second* course of lectures on the general principles and practice of surgery; and it is not difficult to foresee that unless the student shall find good reason to prefer the former, he will not readily be induced to pay the Professor a higher fee for *three* lectures a week, when he can get *five* lectures a week from the other surgical teachers for a lesser fee.

It may not perhaps be out of place to observe, that the Professor of Military Surgery is not by the regulations of the University an examiner of candidates for the degree of M.D.; and that, in common with several other lecturers, he some years ago resigned his situation as an examiner at the Royal College of Surgeons; thus voluntarily divesting himself of any influence which such situation might be supposed to have in favour of his class.

If, in a time of general peace, under many unfavourable circumstances, and

with the doors of the army and navy almost shut against entrants into the medical service of the public, Dr. Bellingall has succeeded in drawing together a class respectable for its numbers, as well as for the talents and experience of many of its members, we do not think that this argues either against the utility of the Professorship of Military Surgery, or the mode in which it is conducted. Of the utility, indeed, of such an institution, we cannot for a moment admit the Editor of the *Lancet*, or any of his coadjutors, to be competent judges; but upon this point we are fortunately enabled to refer our readers to the opinion of Baron Larrey, recently expressed in the Preface to his *Clinique Chirurgicale*—an opinion which we consider somewhat "more german to the matter," being the result of forty years' experience, and of six-and-twenty campaigns. See also the review of Dr. B.'s lectures in the *United Service Journal*—a review evidently written by a man of experience in the public service.

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#### ANALYSES & NOTICES OF BOOKS.

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"L'Auteur se tue à allonger ce que le lecteur se tue à abréger."—D'ALEMBERT.

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*On the Diseases and Injuries of Arteries, with the Operations required for their Cure.* By G. J. GUTHRIE, P.M.S.

[Continued from p. 507.]

THE first portion of this work, as we have already shewn, was almost exclusively devoted to the subject of aneurism. We now come to the second part, which relates to the wounds and injuries of arteries, with their treatment, unconnected with aneurism, and which, as is very satisfactorily shewn, ought to be distinctly different; though such has not always or generally been the case. The importance of the subject, and the very able manner in which it is treated, is well deserving the careful consideration we have given it.

In John Bell's *Principles of Surgery* is a historical sketch of the progress of science, relating to the theories and practice adopted in the treatment of injuries of arteries, traced in his peculiarly nervous and masterly style, having



the same object as the chapter which forms the commencement of this division in Mr. Guthrie's work. In reading this, we have been involuntarily carried back in our memory to that author, whose works remain unrivalled for the powerful interest their perusal always inspires. The discourse we have alluded to is inferior to none that ever sprung from his pen; for though he often erred in his appreciation of the labours of others, and his opinions, even when correct, are often painted in an exaggerated manner—carried away by the enthusiastic spirit that ever guided his pen—yet this, as all his chapters, abounds in sound chirurgical knowledge, and his magic style is always sure to irresistibly chain the attention of the student to his pages. We recal, with something of his own enthusiasm, the period when we hung over his works with a pleasure more like that arising from the excitement of a novel than a book of science. Many have been indefatigable in picking out for display the faults and the errors scattered through his works, while his glowing eloquence is passed over unnoticed, though it must have been felt by all. Rochefoucault has well observed, that it is easier to criticise than to appreciate an author; and it has generally seemed to give more pleasure to find out faults than merits.

A great part of John Bell's "Discourse" is occupied with the treatment and opinions in vogue before Paré immortalized himself by the signal improvement he introduced in surgery, of the needle and ligature, instead of the cruel and desperate remedy of the actual cautery, forming a distinct epoch in the history of surgery; and for which, by-the-by, he was unremittingly persecuted by the college of the faculty in Paris. He afterwards proceeds with the steps made from that period to his own time. Mr. Guthrie has embraced a part of that space also, bringing it down to the present moment; in which John Bell's opinions, as well as others of later date, are of course included.

Mr. Guthrie has come to the consideration of the subject before us with all the advantages to be derived from the present improved state of science, aided by opportunities which few have enjoyed in such abundance, or apparently profited by more sedulously. In the Peninsula, from the firing of the first

to the last shot of that war, and in the last campaign high in command, he was peculiarly fortunately placed for observation, on all the various injuries of arteries; his attention was pointedly directed to this subject among others; and we consequently find in the present work, not only valuable results in the conclusions drawn from experience, but a richer collection of cases to bear them out than in any other work we are acquainted with. That the author should, in all the hurry and confusion of severe campaigns, have constantly and unremittingly directed a portion of his attention to the investigation of points of surgery, the theory and practice of which were but obscurely elucidated, when the mere labour of the duties must have been harassing and fatiguing in the extreme, marks an energy of character that is not found in common minds; and there are not many who would quietly pursue their researches, after being driven from the table by a cannon-ball, with the fire of shell and musquetry upon the house.

The state of this part of surgical science at the present moment, and its progress during the last century, is very fully considered and described. We cannot, perhaps, do fuller justice either to the work or our readers, than by a *coup d'œil* of this portion; in which we will endeavour to give a summary of its contents—leaving, of course, all the cases in illustration, and other detail, for perusal in the book itself.

We may congratulate ourselves that we can no longer justly complain, as John Bell did, that "the diseases of the arterial system have not even been slightly investigated." The names of Jones and Hodgson alone are sufficient to remind us of the step we have made in this branch. We lately heard a surgeon, high in his profession, inveigh against bloody operations and the butchery of cutting off limbs, as a practice, if not actually to be abolished, yet to be looked on with abhorrence; and we have known many inclined to consider their surgical brethren as contaminated by the blood they shed. Let those who indulge in such opinions look back a few centuries, when operators, "ignorant of the means now in use, of stopping hæmorrhages, did not venture to cut out the most trivial tumor, or they did so with fear and uncertainty. They performed those operations slowly

and imperfectly, with burning irons or ligatures, which we now perform rapidly and safely. If they ventured to amputate a member, it was only by cutting, after it was gangrened, among the putrid flesh; they merely separated parts which were already dead and bloodless; so great was their abhorrence of blood;" or glance at *Aquapendente*, and read his description:—"If it be a moveable cancer, I cut it away with a red-hot knife, which sears or burns as it cuts; but if it be a cancer adhering firmly to the thorax, I cut it, without either bleeding or pain (!), with a wooden or horn knife soaked in aquafortis; with which having cut through the skin, I then do the rest by digging out the glands with my fingers." Let it be remembered these operators were not barber-surgeons, but regularly graduated physicians; and it will no longer be disputed that the most important discovery in medical science, since it has become one, is that which has enabled us to command a bleeding vessel by a needle and ligature—which has substituted the scalpel for red-hot irons, and the effusion of blood for the scorched stump of a patient, writhing under pain almost too great for human endurance. Gigantic steps have been made with it for the benefit of mankind—not only an immense saving of life, but an incalculable decrease of suffering, has been the result of the bold and judicious employment of the knife. Before this, actual cautery seemed to have usurped the office of philosopher's stone, and to have been a panacea for all complaints. With the fifty-eight chapters on the use of cauteries, by *Albucasis*, and the sets of six, seven, and ten irons, patients must have been in a fair way to be scorched as the ancient warriors were armed—cap-a-pied; for we find it was prescribed for all diseases, from leprosy to dropsy.

Mr. Guthrie begins by referring to the experiments which have been performed on the arteries of animals; and describing the different processes which nature adopts in animals and man, proves that those experiments are any thing but conclusive, and will, in fine, if depended upon, lead to fatal error;—for instance, if a large artery in a dog or horse be punctured with a needle, blood will ooze slowly out, and after a little time coagulate on its surface; a very small circumscribed tumor will be

formed, and if the artery be examined some time afterwards, scarce any sign of injury will remain. Even a longitudinal slit will heal in the same manner; and it is often found, that in an artery divided transversely, one quarter of its circumference, if it has not been denuded, a coagulum will form, and in a few weeks only a cicatrix will be observable where the edges have united. In man, on the contrary, the process of nature seems by no means so favourable: an artery punctured by a needle will sometimes heal, but a wound of a tenaculum has produced ulceration and consequent hæmorrhage, requiring a ligature to be applied; a longitudinal slit will invariably lead to further consequences. In a transverse division of a part of the artery, the difference between the arteries of man and of animals is perhaps still more strongly exemplified: there can be no doubt, therefore, that the conclusion drawn from these facts is perfectly correct—that "no reliance can be placed in man on the efforts of nature in healing a wounded artery, neither will observation permit of any expectation being formed of such an occurrence." This is a principle which is generally adopted; nevertheless we think this difference has been in a great measure overlooked; particularly in the experiments made by Dr. Jones, of cutting away the ligature a few hours after it had been tied on the arteries of animals. The tube was found obliterated, and it was hoped a great improvement would be effected in the operation for aneurism. When tried on patients, however, its success did not at all answer the expectations, and it was finally abandoned. Had this difference been sufficiently understood, it is probable that this would have been at once the conclusion drawn: nature has more especially and efficiently provided the remedy for injuries to animals, since they are deprived of all other aid.

The opinions and treatment of *Celsus*, *Rufus*, *Galen*, *Ætius*, and *Petit*, are glanced at; after which those of *Morand*, to whom he thinks injustice has been done; and it is true that he has been the object of much frivolous criticism about his theory of the longitudinal fibres retracting the ends of a divided artery. The ends are retracted by some fibres: he was right, therefore, in the important part of the fact; and whether the retraction is effected by longitudinal or

diagonal fibres, is a question of the slightest possible moment. After noticing Sharp and Pouteau's opinions, Kirkland's are rather more dwelt upon, in which his opinions are summed up. They are both correct and important, and have, as Mr. G. remarks, been in a great measure overlooked.

"1. That hæmorrhage from a considerable artery is easily and effectually suppressed by only making a perpendicular pressure upon the end of the vessel for a few minutes.

"A statement that was overlooked or neglected by his successors, but which is nevertheless essentially correct.

"2. That the pulsation, at first, is very plainly seen at its extremity, but after some time it becomes less perceptible.

"This is also a fact, which will be admitted by every one who has had occasion to open a stump even one hour after amputation, on account of secondary hæmorrhage; whilst the reverse is also proved, by the same investigation, to take place in arteries which have not undergone the processes which give rise to its suppression.

"3. That the bleeding is not suppressed by a coagulum, but by the vessel being closely contracted for nearly an inch from its extremity. That the artery gradually contracts and becomes obliterated up to the nearest collateral branches, which dilate in proportion, and that the mere intercepting the passage of the blood through the artery for a short time, was all that was required to effect these objects."

Mr. J. Bell was undoubtedly wrong when he denied the retraction of the artery, or contraction of its fibres, when hæmorrhage stops of its own accord: he fell into the same error that Poutaud had done before him. This brings us down to Dr. Jones's work, justly considered one of the most valuable in our language on this subject. In reference to that gentleman's description of the mode in which hæmorrhage is naturally stopped, Mr. G. remarks:—

"In the different theories I have noticed, and especially in that of Dr. Jones, it does not appear that the gentlemen who proposed or maintained them have ever conceived that there was a difference in the means employed by nature, according to the size of the artery injured or divided; that the difference of structure between an artery, such as

the carotid or the inguinal, and the tibial or the radial, could cause any deviation from the process they described as taking place, and as they presumed in one invariable manner in all arteries. I shall venture, however, to say, that on the size and variation of structure of the artery, the process employed by nature essentially depends; that it is not the same in large as in small arteries; and that it is not even quite the same in the upper and lower ends of the same artery.

"An artery of moderate dimensions, such as the tibial or brachial, and particularly all below these in size, are in general capable by their own intrinsic powers of arresting the passage of the blood through them without any assistance from art, or from the surrounding parts in which they are situated. This overthrows at once the whole theory which relates to the sheath of the vessel and its offices, and in a great measure to the importance derived from the formation of an external coagulum." In confirmation of which the author refers to a case of a soldier who had his arm carried away by the bursting of a shell, and who was brought to him shortly afterwards. "The axillary artery becoming brachial was torn across, and hung down lower than the other divided parts, and pulsated up to the very extremity. Pressed and squeezed in every way between my fingers, in order to make it bleed, it still resisted every attempt, although apparently by the narrowest possible barrier, which appeared to be at the end of the artery, and formed by its contraction. The canal was marked by a small red point, to which a very slight and thin layer of coagulum adhered, the removal of which had no influence on the resistance offered by the end of the artery to the passage of blood through it. In another case of a similar character, I cut off the end of the artery at less than an eighth of an inch from the extremity, when it bled with its usual vigour. In both, the vessel for that distance was contracted, so as to leave little or no canal at its orifice, and what there was, was filled by a pin-shaped coagulum.

"During the action of Salamanca, a soldier was brought to me, whose leg had been carried away by a cannon-shot a short time before. On examining the wound, I found the posterior tibial artery, pulsating to its extremity in a



similar manner. As he had lost a considerable quantity of blood, and was much discouraged, I did not try to make it bleed, but amputated the leg forthwith. I have had many opportunities of seeing the same thing, and therefore I assert, that it is by no means of unfrequent occurrence in injuries of this nature."

And again:—"Having thus established the fact by observation and experiment on man, that arteries in the extremities of the second order in regard to size will cease to bleed, through their own efforts, unaided by the assistance of the surrounding parts, I must endeavour to prevent any misconception on the subject. I by no means intend to imply, that they cannot nor ever do receive any from them; for I am aware that in a great variety of instances, when the artery is divided *in situ*, great assistance is given by the surrounding parts, after the retraction of the artery, and from other causes.

"The power and influence of the heart over the circulation through the arteries has been greatly overrated; and although it may appear strange on the first view of the subject, I have no hesitation in saying, that the fact is exactly the reverse of that which is usually stated, and the sooner surgeons deceive themselves the better. The heart exerts a comparatively trifling degree of influence over the circulation, a fact which may be easily proved by any one disposed to take the trouble of doing it. If the axillary artery be laid bare, previously to an operation for amputation at the shoulder, and the surgeon take it between his fore finger and thumb, he will find that almost the slightest possible pressure will be sufficient to stop the current of blood through it. Retaining the same degree of pressure on the vessel, he may cut it across below his finger and thumb, and not one drop of blood will flow."

Two other cases are given a few pages further, proving that when the power of circulation is much diminished, hæmorrhage may be stopped by an external coagulum formed in the hollow of the sheath left by the retraction of the artery: in these two cases shock was evidently the case, the ends of the femoral artery in both were torn, and the orifices but very slightly contracted. Mr. G. concludes:—"I have not met with an instance in

which it has been necessary to tie the femoral artery after it had been divided, and the hæmorrhage had ceased for the space of twelve hours, the efforts of nature being efficient to prevent its return; but I have had several opportunities of examining these arteries, in consequence of the patient's having died of gangrene of the extremity, or of hæmorrhage from the lower end of the artery requiring amputation." And many cases are detailed in support of the opinion.

We now come to the consideration of a very important point—hæmorrhage from the lower end of a divided vessel. "It is a very curious and interesting fact, that the lower end of a divided artery is more prone to secondary hæmorrhage than the upper; so much so, indeed, that when it occurs after having been arrested for a period of four hours, it takes place in all probability from the lower end. This may always be known from the darker colour of the blood, and from its flowing out in a continuous stream, in the same manner as water rises from a spring, and not with any arterial impulse. The surgeon has no right to believe that the blood comes from the upper extremity of the artery, unless it is of a florid, scarlet, arterial colour, when it will usually rush out with force, if not with the undisguised arterial impetus. This cannot be an accidental circumstance; it has happened much too often to be attributed to such a cause, and it has appeared to me to arise from a difference in the process adopted by nature in one end of the artery to that in the other. It is a point to which I paid particular attention during the whole war, and which I have since made the subject of experiment. I cannot be mistaken as to the fact, although I may err in the explanation."

The explanation of this is very difficult, and Mr. Guthrie has failed in establishing a good one. From the observations he has made, he concludes that the retraction and contraction of the lower end of a divided artery is neither so perfect nor so permanent as at the upper end, and that the internal coagulum is either altogether wanting or very defective in its formation; and further, "from these and other opportunities which I have had of making similar observations, I am led to conclude that the fact is established of a

difference taking place in the manner by which nature closes the upper and the lower divided end of the same artery."

We now come to the consideration of the methods of performing Operations on Wounded Arteries, and on this subject Mr. Guthrie has made two improvements of considerable importance, and indeed has demonstrated so clearly, both by reason and proofs drawn from a very great number of cases, that what he proposes, and has himself practised, is an improvement on the ordinary mode of proceeding, that it can scarcely be a matter of doubt to any one after reading what he says.

The two points we allude to relate, first, to the prejudice that has very general influence against dividing the fibres of a muscle in the operations for the arteries; and the second consists of a new mode of taking up the posterior tibial artery.

Mr. G. first shews how inapplicable the treatment adopted for the cure of aneurism, by placing a ligature above the artery, is to wounds of the artery; it was, nevertheless, the most common mode of proceeding until late years that it has been abandoned, and both ends of the artery secured at the wound. Mr. Guthrie claims a share in the restoration of this method, which was common before Hunter's time, and is the proper one, and we believe with justice; but though the principle is abandoned, the *modus operandi* has been retained in many instances, as though the operation were for aneurism, which he attributes in a great measure to the "strange and unaccountable fear of cutting muscular fibres, which seems to pervade the minds of all the surgeons of the present day who have treated on those subject;" he therefore proceeds, at considerable length, to shew the fallacy of these fears. A case is supposed where a pistol-ball has passed across the calf of the leg, close behind but not injuring either bone, blood flowing from both wounds, and the posterior tibial artery wounded: it is then asked if we should, with Baron Dupuytren, tie the femoral artery as for aneurism, or on the other hand cut down and tie both ends of the artery? it is presumed the latter operation is decided upon, and the full description of the method to be adapted for that purpose is quoted from "the best English anatomical and sur-

gical work on the arteries extant." According to this we are directed "to make an incision about four inches in length along the inner edge of the tibia, through the integuments and fascia, taking care to avoid the internal saphena vein. The edge of the gastrocnemius muscle will be exposed,—this may be easily raised and drawn to the outer side; a director must then be insinuated beneath the head of the soleus, on which this muscle must be divided from its attachment to the tibia: the deep fascia of the leg is here very tense and strong, binding down the deep-seated muscles and the tibial nerve and vessels: this must be cautiously divided on the director passed beneath it," &c. Some further description is quoted, abundantly proving the operation to be any thing but a simple one. Mr. Guthrie, after tracing the case on to the end, to shew this still more indisputably, then proceeds to detail his own method, which is decidedly simple and easy in comparison.

"An incision is to be made 6 or 7 inches in length, by successive and rapid incisions, through the integuments and muscles of the calf of the leg down to the fascia. The centre of the incision is to be on a line with the shot holes, or if they are diagonal to each other, between them; and it may be either directly in the middle of the calf, or a little to the side of, or directly over the artery supposed to be wounded,—it is not material which. The smoothness of the fascia points it out, and the loose cellular membrane connecting the divided muscles to it, allows of the edges of the long incision being easily separated, and to such a distance as to admit of the exposure of the great nerve, the arteries, and veins, in as distinct a manner as any other arteries, veins, and nerves, can be exposed in the human body. The tourniquet is now to be unscrewed, and the bleeding, if the wound did not bleed before, leads to the spot where the artery is injured. The knife may be applied perpendicularly to the fascia, and the artery laid bare for three or four inches in extent, by as common a piece of dissection as any ever practised, and nothing can interrupt the application of the ligature. The nerve and the fascia cease to be surgical bugbears, and the operation is as simple as any in surgery."

We now come to that part which re-

lates to the division of muscular fibres in operating for the securing of arteries.

"It is now necessary that I should go a step further, and shew that a muscle is to be cut transversely to its course or fibres, whenever it may be desirable to do so, in order that a ligature may be placed on a wounded artery beneath it, and also to prove that little or no inconvenience results from such proceeding." Two cases are given in support of this opinion; in the first, the deltoid was cut directly across the middle, and the patient's recovery was so complete that he was unconscious some time after of any defect in strength or motion whatsoever; in the second, a French soldier received a sabre-cut, vertically and directly across the fibres of the pectoralis muscle, at the inner side of the vessels; the lower and fore edge of the muscle was completely divided: this united so as to leave merely a little weakness of no consequence."

As Mr. Guthrie observes, a wound across the fibres, when it happens by accident, is not considered by any surgeon an injury of much consequence, nevertheless if the artery is injured through the pectoral muscle, it would be at once declared highly improper to cut it across; in such an instance the same work above quoted is referred to. When "a semilunar incision is to be made about three inches long through the integuments, commencing about one inch from the sternal end of the clavicle, and extending towards the acromial process, as far as the anterior edge of the deltoid muscle," &c. This description is concluded thus;—"Even on the dead body, this operation is by no means easily performed; but on the living subject it must be attended with considerable difficulty, particularly in corpulent persons; the depth at which in such individuals the artery lies, together with its complicated relations, must render the application of a ligature to it peculiarly hazardous." Mr. Guthrie, on the contrary, recommends that the artery should be sought for, by dividing the muscle transversely in its course, taking the whole, or cut at the centre of the incision, if possible or necessary, and then looking down upon the artery, surrounded by its accompanying veins and nerves, as if it were a common demonstrative dissection. With respect to the description just

quoted, he observes,—"This description is critically and anatomically correct; no man in the united empire could do the operation better than the author of the work from which I have extracted it; and yet the operation is so thoroughly dangerous and useless, and so contrary to true principles, that it ought never to be performed. It ought to be struck out of the catalogue of operations. I know it to be dangerous, because I am aware of two persons having died under it, before the ligature was applied, the axillary vein in both instances having been injured. In aneurism of the axillary artery, the operation should always be done above the clavicle; and in a case of wounded artery, at the spot in which the artery is wounded."

The securing of the ulnar artery in the same manner, a little below its origin, so far from being impracticable, as has been pronounced by very good authority, Mr. Guthrie decides to be perfectly safe and possible by dividing the interposing muscular fibres; taking care not to injure the median nerve running between the two origins of the pronator teres muscle.

We have entered very fully into the detail of these points, for we consider them to be of importance. All the other operations which are described we must pass over: we will merely stop to notice some of the conclusions Mr. Guthrie has drawn, bearing on these points.

"If muscular fibres intervene between the artery and the surface, they should be divided, if they cannot be readily turned aside, so as to give a clear and distinct view of the wounded vessel and its accompanying veins or nerves."

"A tourniquet should never be applied in an operation for aneurism or for a wounded artery. Compression by the hand is allowable in the course of the vessel when wounded.

"The blood from the upper end of a divided artery, or that nearest the heart, is of a scarlet arterial colour.

"The blood from the lower end of a divided artery, or that which is furthest from the heart, is of a dark or venous colour, when it happens to flow immediately after the division of the vessel. At a subsequent period it may assume more of the colour of arterial blood, but it rarely does so for several days after-



the receipt of the injury, and always flows, or at least until a very late period, in a continued stream.

“ This regurgitation or flow of blood from the lower end of a divided artery is a favourable sign, inasmuch as it shows that the collateral circulation is in all probability sufficient to maintain the life of the extremity.”

We have already expressed our opinion of the importance of this subject, and the necessity of the surgeon being well-informed, and above all, certain and decisive in the plans he would adopt. We have, therefore, drawn largely on Mr. Guthrie's labours, to give our readers as much of the information it contains as our limits will allow. This second part of the work we think superior to the first, in which there is a slight want of arrangement; and all the observations and cases relating to the different points of the subject, it has appeared to us were not sufficiently closely connected together. No such objection can, however, be raised to the portion which embraces the wounds and treatment of arteries; each opinion advanced is followed up by the reasons and cases connected with it in so conclusive a manner as to constantly carry the conviction of the reader with them.

In an age like the present, when every tyro “ sends forth his bark,” and the publication of a book, instead of shewing, as in the days of our forefathers, that the author knows more than his neighbours, very often proves directly the reverse; it is gratifying to meet with a work developing true principles of science; uniting great research and labour with equal knowledge and talent, and such we pronounce the volume before us to be.

*Lives of British Physicians.*—Murray's Family Library. 1830.

THIS interesting little volume, which constitutes a number of Murray's Family Library, is appropriately named *Lives of British Physicians*, for in it we find notices of men of all denominations—English and Scotch—Fellows and Licentiates—pure Physicians, and Physician-Accoucheurs. It is, for the most part, written in an easy and agreeable, but not equal style. In some of the most

favourable specimens we think we can perceive that the writer, in his progress, has been fain to lean for support on the “ Gold-headed Cane.”

One of the “ *Lives*,” which shews the greatest research, and will be read with most interest, is that of Sydenham: the narrative, indeed, is meagre, for the incidents connected with the life of that most distinguished of British physicians are extremely few; but the writer has happily embodied in his biographical sketch an appalling account of the plague, as it appeared in London in the time of Sydenham, as well as a notice of some of his medical doctrines regarding small-pox, gout, &c. We shall occasionally select a few anecdotes.

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## MEDICAL GAZETTE.

Saturday, July 17, 1830.

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“ *Licet omnibus, licet etiam mihi, dignitatem Artis Medicæ tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso.*”—CICERO.

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### SOME CIRCUMSTANCES CONNECTED WITH THE ILLNESS OF HIS LATE MAJESTY.

IT was our intention not to have reverted to this subject—but as we have now the means of confuting, from direct sources, some very extraordinary and impudent misrepresentations, which have been circulated with an industry and perseverance worthy of a better cause, we venture once more to trespass on the patience of our readers.

The object—so far as a distinct purpose can be discovered amid so much contradiction and ribaldry—is to make out that both Sir Astley Cooper and Mr. Wardrop were prevented from attending at Windsor, by the interference either of Sir William Knighton or of the Physicians, against the express wish of the royal patient himself; while it is implied that the medical men who actually attended were not aware of the nature of the disease, and that if Mr. Wardrop's advice

had been adopted, his Majesty's life might have been prolonged.

These are points with regard to which we had, at the time, no positive information, but we deemed the statements to be unfounded, because we knew that the reasons assigned for them were untrue. Thus we were told, as a reason why the King should have desired to see Sir Astley Cooper, that he had formerly sent him to aid the medical attendants of the late Duke of York, and that his royal brother had derived great benefit from his prescriptions. Now we have stated before, and repeat, that neither of these allegations are founded on fact, and for the truth of our assertions, and the untruth of all those which are different, we appeal—to Sir Astley Cooper himself, who wrote a letter to the Editor of the Herald, denying the statements with regard to the medical part of the story—to Mr. Simpson, the other surgeon who was in attendance—to the Physicians—and to Sir Herbert Taylor, who, *we know*, is fully aware of the accuracy of the official notice from which we have taken our information, and which appeared in the Courier at the time.

Again, it is said that the physicians objected to Sir Astley Cooper because, in the case of the Duke of York, he insisted on affixing his name to the bulletins. Unfortunately for this assertion it happens that no bulletins whatever were issued in the Duke of York's case, either before or after the distinguished Baronet was in attendance. But, besides, we may observe that, in a medical case, it has not been the custom for the surgeons to sign the bulletins—nor in a surgical case, for the physicians to do so. Thus when the late Queen Charlotte was ill, Mr. Keate attended her, with Sir Henry Halford and Sir F. Millman, but did not add his name to the bulletins; and when, in 1821, his late Majesty had a tumor extirpated from the scalp, the report,

which was transmitted to Lord Liverpool, was signed by the surgeons in attendance—namely, Sir E. Home, Mr. Cline, Sir Astley (then Mr.) Cooper, and Mr. Brodie; while the physicians (Sir H. Halford and Sir M. Tierney), though present at the operation, and meeting the surgeons in consultation, did not attach their signatures to the document. On the present occasion, therefore, nothing has been done in this respect but what former precedents had sanctioned: nor, for ourselves, do we see any reason whatever why the long-established and judicious usage should have been departed from. As to Sir A. Cooper, he has enjoyed too high a reputation, and, by his skill as a surgeon, too long “bought *golden* opinions from all sorts of people,” to render it necessary that he should seek for reputation in a department foreign to his own;—nor, on the other hand, do we mean it as in any degree offensive to him, when we state that it was current in the profession, long before his Majesty's last illness, that some of those little departures from etiquette, to which we alluded in a former number, had led the King to require the services of another surgeon. Indeed, when Sir Astley reflects that at this time last year a parallel was drawn between him and Dr. Eady, and that the preference in professional respectability given to the latter, by the very parties who now affect to stand up for him as having been slighted, he can have no difficulty in appreciating their disinterestedness and sincerity. What the exact cause of offence may have been we know not; but one of the stories most current—which, however, we only give as an *on dit*—is, that Sir Astley, on one occasion, gave his Majesty the wholesome, but, considering their relative situations, rather injudicious advice—to throw off his retiring habits, and see more of his subjects, adding, that if he did so, “he would

become the most popular man in Europe." Whether the anecdote be true or not, no one who knows Sir Astley's manner can fail to regard it as not improbable; nor, if we remember the late King's jealousy of familiarity, can it be looked upon as insufficient to have offended him. Dr. Bankhead, who, at the instance of the late Lord Londonderry, was at one time a good deal about the King, is said to have lost his favour for ever by having squeezed his arm, in his anxiety to give effect to something he was saying; and all remember the effect of Brummel's impertinence, in asking his Majesty, when Prince of Wales, to ring the bell.

But the outcry about Sir Astley is merely a blind to cover the puffing notices of Mr. Wardrop, with respect to whom especially it is attempted to shew that the King was not a free agent. Now the same persons who would have us believe that those about his Majesty were able to admit or to exclude exactly whom they chose, inconsiderately assert that the King would not see Sir Matthew Tierney for twelve days, while he insisted, against the wishes of his attendants, on seeing Mr. Nussey; from which it appears, according to their own shewing, that his Majesty had a will of his own, and power to make it known, both as to whom he would admit and whom he would exclude from his presence—a circumstance not quite consistent with the idea of his having had any very strong desire to see Mr. Wardrop, any more than having previously substituted him for Sir Astley Cooper would seem to imply any decided predilection for the Baronet. But if Mr. Wardrop has grievances, let him speak out manfully in his own name, and we have no doubt he will obtain an answer; do not let him, as at present, suffer the world to imagine that he is countenancing such a system of indis-

criminate slander as that now adopted by the Lancet, in direct connexion with his name. No honest cause can require the aid of ribaldry and abuse to gain the public ear; nor, if he be sincerely desirous of bringing forward the *facts* of the case, can he be at any loss for the means of doing so. Mr. Wardrop gave the publishers of this journal notice of an action, for stating that he was not in attendance on the King—why does he not go on with the legal proceedings? What has occurred to change his opinions as to the liberty of the press? We desire nothing more earnestly than to place all those who were about his late Majesty in the witness-box. Again we ask, if Mr. Wardrop really regards this as a desirable consummation, why does he not proceed?—We shall answer, as probably he may not choose to do so—because their evidence would give a totally different colouring to the whole transaction from that which it has received in the pages of the Lancet. The King, during the whole course of his illness, never once expressed a desire to consult Mr. Wardrop; and when it was first stated to him that the assistance of a surgeon would be required, he himself desired that it might be "Brodie or Bob Keate." As to the story of Mr. Wardrop having applied the stethoscope to his Majesty, and thus detected disease of the heart, perhaps the writer in the Lancet will inform us why Mr. Wardrop did not mention this circumstance *in the written opinion of his Majesty's case, with which he favoured the physicians subsequently to the time alluded to? Why did he therein state the disease, according to his judgment, to be gout, without saying one word of his stethoscopic discoveries?*

As to the merit of the diagnosis and prognosis formed by his Majesty's physicians,—when we wrote upon this subject before we argued only on general



principles—now we speak, not on the authority of mere assertion, but from positive knowledge, that the physicians throughout not only were aware of the exact nature of the disease, and extent of the danger, but that they stated these in terms as distinct as words could make them in their communications to the Prime Minister. Sir Henry Hallford, in his letters to the Duke of Wellington beginning at the commencement of the King's last illness, refers to the *disease of the heart*—to the incipient effusion, before it had appeared externally—to its probable increase, and to its inevitable result: one consistent strain is observed throughout, and if any further explanation to the public had been deemed necessary, it obviously rested with the noble Duke to have made it. But the reasons we pointed out in a former article, as rendering temporary concealment expedient, have, we believe, been deemed so satisfactory, that it is unnecessary for us to revert to that part of the subject. Nay, more than all this, we can positively state that six or seven years ago his Majesty's physicians thought it their duty to transmit a notice to Lord Liverpool, as prime minister, informing him that the King had disease of the heart, and was exposed to the risk of sudden demise. For this paper search is now being made; and of course, if found, it will be published. It is remembered by some of the gentlemen about the Treasury, as having been subsequently in the possession of Mr. Canning during the short time he was premier. The reasons for such a paper having been concealed are obvious.

As to the adducing of cases as parallel, where no parallelism exists—as to the allegation that if Mr. Wardrop's proposal of practising depletions had been adopted, his Majesty's life might have been prolonged, or preserved—they are really too ridiculous to merit a moment's notice. The writer who could assert that the appearance of

blood in the sputa was alone a sufficient reason for bleeding, and that a broken-down and exhausted frame, with dropsy from ossification of the heart, could have borne such treatment—forgetful that the loss of but six ounces of blood was the immediate cause of death—we say that such a person is incapable of appreciating medical reasoning, and the mere advancing of such a doctrine proves more strongly than any reasoning of ours could do, that the public are not *always* mistaken in the distinction which they make between physicians and surgeons. Nor can we account for the opinions and conduct attributed to Mr. Wardrop in any other way than by supposing, both that he really did not understand the nature of his Majesty's case, and that he entirely mistook the degree to which he himself enjoyed the confidence of the Sovereign.

That the physicians retained to the last the unshaken regard of their royal patient, who literally *clung* to them for safety in the paroxysms of his disease, and marked by many gracious expressions the gratitude of an affectionate master—that they satisfied the Royal Family and the government, and that they did all that men could do under such afflicting circumstances—are facts not less incontrovertible than that the attacks upon their professional characters are utterly unworthy of their notice. But there is one point of a nature entirely different—an attack upon the honour of one of the physicians—involving, as it appears to us, the charge of a high misdemeanor, and which, on public grounds, the Government ought, we think, to insist on being brought forward in a court of law. It has been asked—if it be not true that Sir Matthew Tierney signed the bulletins without seeing the King, why is such a libel allowed to pass unpunished? and we, who know from direct authority that it is most grossly false, echo the question. The infamy and worthlessness of

the original source are not sufficient reasons for despising it when the lie has been circulated in every newspaper—when the public press, like a huge speaking-trumpet, has made the slander resound through every village in the land. Sir Matthew, it is said, once intended to institute legal proceedings; why does he not abide by that intention?—why is not the author of the calumny exposed to the punishment and the infamy which such an atrocity demands? The public are not—will not—ought not to be satisfied, without such an exposure as a court of justice, or the bar of the House of Commons, alone can give on an accusation so grave, and involving public questions of such moment. Where such a charge remains unnoticed, the world will still suspect that there was some foundation for it; and however attacks on mere professional character may be despised, the one in question rests upon different grounds, and in our opinion ought to be met in a different manner.

For ourselves, it has been supposed, because we have supported the King's medical attendants, that we are therefore "connected" with them; and even the *Times* expressed this opinion, though they subsequently did us the justice to insert our disclaimer\*. We can only repeat, what we stated before, that up to the period of his Majesty's decease, none of our facts came from any of the late King's *attendants*, medical or otherwise†, and that the opinions, right or wrong, were

exclusively our own. But even were it not so, the arguments on the various questions to which the case has given rise remain the same; and if they be good, it matters not a rush from whom they came.

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#### REMARKABLE DEGREE OF OBESITY IN THE PERSON OF HIS LATE MAJESTY.

We understand that the quantity of fat enveloping the several viscera in the person of his late Majesty was very great. An immense deposit was found about the kidneys, and the adipose matter seemed even to have pervaded the interstitial texture of these glands. About the heart the quantity was also prodigious, and such as must have oppressed its action to a considerable extent. But the rarest appearance, considered pathologically, was that presented by the lungs. We inferred, from so much stress being laid on the "embarrassment of breathing," that "considerable portions of the lungs were consolidated;" and offered this as an explanation of the great difficulty with which the respiratory organs performed their functions. This conjecture has been entirely verified by the appearances found after death. Beneath the pleura, fat was deposited to an extraordinary extent; and at the edges of the lungs, where the pleuræ covering the different surfaces meet, or rather where the membrane forms an angle in passing from one surface to another, there was a complete border or fringe of fat—so that a considerable portion at the margins of what is usually lung, was consolidated. Thus, although as stated in the official report, the "structure of the lungs had undergone no change," yet a considerable proportion of the mass compressed within the pleura was impervious to air; affording a striking confirmation of the accuracy

\* The *Times* asserted that the writer in the *Gazette* was connected with the physicians, apparently influenced by the minuteness of the details which we were enabled to give, and perhaps from our advocating the cause of the physicians, but next day they did us the justice to publish that part of the article in which we disclaimed such connexion. The Editor of the *Lancet*, like a dishonest knave, places our disclaimer and the note of the *Times* together, as if they had been connected; whereas the remark of the *Times* appeared first, and our disclaimer afterwards.

† The source of our information was very direct and satisfactory, but such as we are not at liberty to disclose.—F. G.

of our inference from the symptoms, even as to this minor and secondary part of his Majesty's disease. The only point with regard to which we were mistaken, was the source of the consolidation; which we presumed to have been caused by the repeated attacks of inflammation from which his Majesty had previously suffered. The result of the case altogether shews the superiority which we derived from having contemplated the subject in a fair and candid manner, without the bias of personal antipathies. The opposite line of conduct led the writer, in a contemporary journal, to attribute his late Majesty's attack to gout, and not to discover that the disease was in the heart till after the post-mortem examination had been made.

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#### KING'S COLLEGE.

WE understand that the following appointments have taken place in the medical department of King's College, viz.

Professor of

Anatomy—MR. MAYO.

Theory and Practice of Medicine—

DR. F. HAWKINS.

Therapeutics and Materia Medica—

DR. BISSET HAWKINS.

Surgery—MR. GREEN.

Chemistry—DR. URE.

We cannot pledge ourselves for the accuracy of the last, but we have good reason to believe that the others will be found correct.

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#### THE KING'S HOSPITAL.

IT is in contemplation to convert the Small-pox hospital into one for the reception of general cases, under the name of the King's Hospital, and to build a separate establishment, on a smaller scale, for the reception of small-pox patients. There is certainly a good opening for a general hospital, which is now required in that increasing part

of the town; and if a general—a small-pox and a fever hospital—were all combined, it would form a very complete and useful establishment. We have but one fear, and that is, lest it be made a job, and connected with the London University. We observe the name of one gentleman who is a member both of the Council of the University, and an active governor of the Small-pox hospital: let the others be on their guard. So far from deriving any advantage from a connexion of this kind, it could only be injurious to the University; which, if unable to have an hospital of its own, had better continue its association with Middlesex Hospital, to which two of the Professors are already attached. By the way, we understand that Dr. Watson's clinical course, with the exception of the introductory and concluding lectures, is given at the hospital—an arrangement by which “the appeal from theory to practice,” which we represented as so necessary, is more direct than we were aware of at the time we alluded to the clinical department of the London University School.

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#### ROYAL WESTERN HOSPITAL.

THE institution known by the above name has recently been the scene of some of the most disgraceful transactions by which the stream of charity was ever polluted. The hospital, as it is called, was got up under the direction of a Mr. Sleigh, who contrived—with the assistance of Wakley, by whom he was patronized—to make himself conspicuous a few years ago, by pretending to reform abuses elsewhere. Failing in these attempts, he resolved to shew the world what an hospital ought to be, and a very pretty specimen it has proved. That any man, with the least share of character or reputation to lose, should ever have connected himself with it, is very extraordinary; but it is obvious,



from the advertisements which have recently been inserted in various papers, that their eyes are at length opened to—what most people saw long ago. Our present purpose, however, is to caution pupils against being taken in, as certificates of attendance at the institution called the Western Hospital never were received at the College of Surgeons, *and in future will not be so by the Society of Apothecaries.*

## EXTRACTS FROM JOURNALS,

### *Foreign and Domestic.*

#### ABSENCE OF THE PULSE.

THE pulse is in some instances entirely absent, without interfering with health. This circumstance occurred in the mother of Dr. S. of this city. The pulse disappeared during an attack of acute rheumatism, which did not appear to retard her recovery, and it never returned during her subsequent life. She was active in mind and body, and possessed unusual health. In no part of the body could a pulse be detected. I attended her during a part of the time of her last illness, which was an acute inflammation of the intestines, but no pulse existed. She died while I was absent from the city, and an examination was not made to elucidate the cause of this remarkable phenomenon.—*Dr. Jackson, in American Jour. of Medical Sciences.*

#### SEDATIVE EFFECTS OF THE SPIDER'S WEB.

The web of the black spider has received commendation from many respectable sources, as a sedative agent, capable of calming, with peculiar ease and certainty, morbid excitability of the cerebral and nervous systems. On the credit of those qualities it has been employed in the various forms of temulence, and not without a share of reputed success, sufficient to entitle it to consideration in that state of constitutional irritation. In the summer of 1827 we tried this article in many cases, and in full doses. To test its qualities, it was given, where the state of the pa-

tient admitted, uncombined with opiates. When thus used, its effects were generally partial or doubtful, and its powers inadequate to the production of tranquillity or sleep. In one case only have I found this substance to exert great or decided sedative attributes. This was the case of an intelligent young man (in private practice), who, after consuming, by his own report, three quarts of brandy, in thirty-six hours, fell into a state of temulent excitation so excessive, that he was incapable of keeping a recumbent or even a sitting posture, for more than a minute, but paced his chamber with a ceaseless step for two days and nights. He was not delirious; on the contrary his conversation was rational, though hurried and vehement. But he was so far under the influence of spectral hallucination, that if he closed his eyes for a moment, day or night, he was instantly visited by a host of phantoms of frightful aspect; hence chiefly his aversion to lie down, or make any voluntary effort to sleep. This patient took opium, opium with camphor, and black drop, at short intervals, and in full doses, until the quantum of opiate approached the utmost limit of probable safe administration, without even partial relief of constitutional irritation, or any apparent proneness to sleep. The temulent excitement kept unabated for twenty-four hours, the second night passed in constant vigilance, locomotion, and mental excitement, and it seemed probable that excitation so intense, protracted, and unremitting, must soon lapse into delirium or convulsions. At this time, the morning of the third day (the second of my attendance), he began the use of the fresh web in pills of five grains every hour. Its effect was prompt and unequivocal. He calmed, even sensibly to himself, with every dose, and watched with desire for the time of repeating the pills. The first effect of the web was to abate his restless movements about the room, he became disposed to sit down, and kept his chair, with short intervals of walking, for some hours. In the evening he consented to go to bed, got up once or twice, but returned to bed without difficulty; took an opiate at night, the first for eighteen hours, and slept continuously for eight hours. The cure was completed without difficulty, by repeating the web less frequently next day, quiet, suitable nou-

ishment, and another opiate at night. The patient spoke emphatically, both the first and second day, of the soothing influence produced by the pills. He was not at the time informed of their composition.—*American Journal of Medical Sciences.*

**SYPHILIS CURED IN AN INFANT BY MERCURIAL FRICTIONS APPLIED TO A GOAT THAT SUCKLED IT.**

Dr. Veré Delisle lately communicated a case to the Académie Royale de Médecine, in which a woman, three months after delivery, contracted a syphilitic disease, characterized by ulcerations on the inside of the labiæ and a gonorrhœal discharge. The child whom she suckled was soon affected with venereal pustules and ulcerations round the anus. It was now made to suckle a goat; and, the inside of the thighs of the animal having been shaved, two drachms of mercurial ointment were rubbed in every other day. The child was cured in a month.—*Archives Générales.*

## HOSPITAL REPORTS.

### ST. GEORGE'S HOSPITAL.

*Large Abscess of the Buttock—Curies of the Vertebrae—Curious Symptoms of Peritonitis—Purulent Deposites in the Lungs.*

JOHN NEWILL, æt. 32, a carter, from Baines, admitted April 28th, 1830, under Mr. Keate.

The whole of the left buttock is occupied by a uniform, elastic, and fluctuating tumor, extending from just below the false ribs to the lower edge of the fold of the glutæus maximus. The skin is not the least inflamed or altered in appearance; the cutaneous veins are rather large. No pain whatever, either with or without pressure of the tumor; no pain in the limb, or on firm pressure of the spine; motions of the hip-joint perfectly free. Feels in good health, and looks tolerably well; pulse rather frequent; is disposed to perspire at night.

Five months ago he began to suffer from "rheumatic pain" in the left buttock, which was slightly aggravated by walking; two months ago he first observed the swelling, which was less than at present, and has since that time continued to increase. For the last two months he has had no pain; lotions only have been applied. He knows no cause for his complaint, except that his occupation has required him to twist himself much at the plough.

On the 30th the tumor was punctured at the superior part, where the fluctuation was most superficial and distinct, and thirty-eight ounces of their purulent fluid were evacuated. The opening was made with a lancet, small, valvular, and closed in the Abernethian manner. No probe was employed.

On the 1st of May the tumor was punctured again about its centre, and fourteen ounces of matter discharged. No febrile disturbance.

On the 3d the operation was repeated, and eight ounces drawn away. The tumor was never much squeezed or handled.

5th.—Is now suffering from heat of skin, thirst, and other symptoms of pyrexia; has had nausea, but no rigor.

Pulv. Jac. ver. Hyd. Sub. aa. gr. iv. M. h. s. s. H. Senn. ℥iss. cras mane.

H. Sal. ℥iss. Vin. Ant. Tart m℥x. Mag. Sulph ℥ss. M. 6tis hor.

7th.—Pyrexia continues, with frequent but not full pulse; dryish white tongue; anxious countenance, and occasional vomiting of yellow, frothy matters. For the last half hour he has complained of some fulness of the abdomen, and tenderness on pressure.

Haust. Effervescens ex Ammon. Carbonate 6tis horis. Om. H. Salin.

8.—Still tenderness of the abdomen on pressure in several places; pulse frequent, full, but compressible; skin warm; bowels not open since yesterday. Has had no rigor, nor any return of vomiting.

Hyd. Submur. gr. iij. Pil. Sap. c. Op. gr. v. statim. P.

9.—To-day the symptoms have assumed yet more decided the characters of low peritonitis. The belly is more tympanitic, and more generally tender upon pressure; the countenance anxious and sallow; the skin warm; the tongue whitish and dry; the pulse more developed. He vomited some greenish fluid this morning. Mr. Keate immediately ordered—

V. S. ad ℥x. Hyd. Submur. gr. iij. Pulv. Jac. ver. gr. iij. Pil. Sap. c. op. gr. iij. M. ft. pil. ij. bis die.

He experienced some relief from the bleeding, but at 6 p.m. the pain had returned as severely as before; the countenance was more pinched and contracted, and the pulse more full and vibratory, though without hardness. The blood was much buffed and a little cupped, with greenish serum.

9 p.m.—Pain still worse; pulse 104, round, vibratory, but compressible. Mr. Smith, the house-surgeon, bled him again to ten ounces, during the abstraction of which the pulse became more frequent, but nothing like syncope took place.

Rep. Pil. 6tis hor.

Magnes. Sulph. 3ss. Tr. Hyosciam. 3j.  
Aq. Menth. vir. 3xi. M. 6tis. hor. in-  
ter med.

10.—More collapsed; pulse feebler and undulating; tongue dry, brownish, red; skin sallow; occasional hiccup. Says he has had no pain in the belly since this morning, and bears pressure on the abdomen. Had sixteen leeches applied early this morning.

*Vespere*.—Apparently sinking; extremities cold.

Burnt brandy. Emp. Canth. abdom.

11.—Has rallied a little; flush half hectic, half typhous, on cheeks, which are extremely sallow; pulse feeble, rapid; no pain in belly.

P. c. pil. sine pil. sap. c. op. 6tis hor.  
Vin. Gall. 3iv. quotid.

12.—No pain in belly; skin cool; pulse fuller, 150; tongue dry, reddish brown; bowels relaxed.

Enema opiat. P. c. pil. hyd. sub. gr. j.  
Pulv. Ant. gr. iij. 6tis hor. Vin. Gall.  
3vi. quotid.

Two bottles of soda water.

*Vespere*.—All the symptoms again of speedy dissolution.

Om. Pil. Ammon. Carb. gr. vi. Sp. Æth.  
Sulph. c. ℥xx. Mist. Camph 3iss.  
6tis hor. Om. pil.  
Beef-tea; arrow-root.

13.—To all appearance moribund.

Although he had been given up as in articulo-mortis several times during the two last days, he had rallied again to such an extent on the 14th as to be put upon the bark. On the 15th, however, he again fell into an extremely low state, and in the course of the day had a violent rigor, with some nausea, which were stopped by the exhibition of brandy. The surface of the whole body was now of a very sallow or bilious tint, and the countenance hippocratic. At 2 p.m. on the 16th, he expired. The discharge from the wound had been very offensive for some days before his death.

*Setio Cadaveris*—24 hor. postmortem.

Body externally yellow; some emaciation.

*Thorax*.—Pleura on right side closely united by old adhesions; a few drachms of bloody serum in left side, with some recent adhesions at its inferior and lateral part.

Neither lung collapsing at all; upper lobe of right gorged with bilious coloured serum, and vascular in parts; lower lobe inflamed, and presenting recent hepatization at its base. In the apex of the lung several "purulent depôts," chiefly near the pleura. Left lung more generally inflamed than the right, and chiefly so in its lower lobe; in se-

veral parts of this lung deposites, like those of the other, but principally at the base instead of the apex.

A little yellow serum, and slight fringes of lymph, in the pericardium; heart apparently healthy.

*Abdomen*.—Very slight and partial injections of the peritoneum, but no lymph or serum. Thick and curdly pus in the cellular membrane external to the peritoneum in the left iliac fossa, left side of the pelvis, and front of the sacrum. It was in parts immediately contiguous to the peritoneum, and in parts separated from it by portions of the iliacus, psoas, or other muscles. The pus extended partly within and partly without the psoas, from its origin down to its insertion. The bodies of the fourth and fifth lumbar vertebrae, and the front of the sacrum, were bare and rough; the left synchondrosis pelvis was the same; the periosteum was separated from the venter of the ilium. This extensive collection of pus communicated with the immense abscess on the buttock, which was under the glutæus maximus and medius, and had lymph in abundance lining its parietes. No bone was denuded on the dorsum of the ilium.

The foregoing is an interesting case in every point of view. Perhaps the most curious feature is the existence during life of the ordinary symptoms of severe peritonitis, and the absence of the usual positive signs of such affection after death. We have either the alternative of supposing that the inflammation of the peritoneum was dispersed, and utterly vanquished by the treatment, or that the symptoms were deceptive, and the phlegmasia counterfeited by disease elsewhere. Both suppositions are attended with difficulty; but on a careful consideration of the case, and attentive observation of its progress, we are certainly inclined, as far as our humble opinion is concerned, to adopt the latter. In the diffuse inflammation, and particularly in the sloughing of the cellular membrane about the pelvis, nothing is more common than for many of the symptoms of peritonitis to present themselves, although the peritoneum be found on dissection perfectly healthy. Thus Mr. Brodie has proved satisfactorily that peritonitis is by no means frequent after the operation of lithotomy, although the common occurrence of symptoms resembling it has led experienced surgeons to pronounce it the ordinary cause of death. In fever, again, and in cases of erysipelas attended with tympanitis, and in the urinary infiltration of the cellular membrane of the scrotum and perineum, we have frequently witnessed considerable tenderness of the abdomen, when examination after death has shewn its contents to be healthy. The present patient had inflammation and curdly suppuration in the cellular membrane of the pelvis and lumbar



region, external to the peritoneum; and we therefore conceive that if any inflammation of that membrane did exist, it must have been inconsiderable, and we need not of necessity suppose that it ever was present at all. The caries of the lumbar vertebra and sacrum, coupled with the total absence of pain upon pressure or motion, are circumstances which, however surprising in the abstract, will not appear so to those who have seen much of lumbar and psoas abscesses. The purulent depôts in the lungs were not indicated so broadly as usual, for until the day before his death the patient had no decided rigor; he had vomiting, however, another characteristic symptom of this curious affection, and the skin was very yellow. What will Mr. Arnott say, when we inform him that no inflammation of the pelvic veins was discovered?—We know not, but this we can affirm, that although the attention of the officers of this hospital has been particularly attracted to the veins since the publication of Mr. Arnott's ingenious paper, the results have been far from confirmatory of his views.

We would wish, before we conclude, to advert to the treatment pursued. The abscess was punctured with all due precautions, and no handling, squeezing, kneading, or probing were employed; yet the case did extremely ill notwithstanding. The fact is, that treat these extensive abscesses, connected with or dependent on carious bone, as you will, the issue is generally too disastrous. A few lucky persons escape now and then, but the great majority are attacked with inflammation of the cyst, or of contiguous cavities or organs, or erysipelas, or purulent depôts; and the votive tablets hung up to commemorate recoveries, are but scanty. As soon as the pain in the belly, &c. was established, depletion was had recourse to, and certainly with good effect as far as concerned the symptoms which called it forth; but the state of collapse succeeded with rapidity, and brandy alone preserved the patient from speedy sinking. It is astonishing what this powerful agent can effect in some cases. Roger North complains that his brother, Lord North, was kept alive much too long by the doctors' cordials, and the accusation is in some degree founded in truth. We remember a miserable worn out patient, affected with rupia to a pitiable extent, who was attacked with the lowest kind of erysipelas, and was given up as lost by all who saw him. The house-surgeon, however, was determined to see what stimulation could effect, and poured brandy, egg, and gin down his throat with the greatest possible perseverance. To the utter astonishment of every one, the man, who was literally kept drunk for weeks, scrambled through his erysipelas, and lived for six or eight months, when he fell a victim at last to another attack of the complaint. We have seen the same thing

on many other occasions, and we are well assured that practitioners in general are scarcely aware of what they may effect by courageous—we might almost say enormous stimulation—on particular occasions.

## GUY'S HOSPITAL.

### *Case of Compression of the Brain.*

PATRICK MAY, æt. 34, a strong athletic labourer, was at work in a corn warehouse at Rotherhithe, when the handle of a crane caught him on the belly, raised him up into the air a height of about nine feet, whence he fell on the floor upon his head. Another account states that the handle of the crane struck him on the head, and knocked him down to the next floor of the warehouse, thirteen feet lower. He was immediately taken up insensible, but in a few minutes he recovered himself somewhat, and was brought here on the 21st June, about half an hour after the injury.

When brought in, blood was oozing from his nose, and before he could be put to bed he became violently sick, vomiting up the contents of his stomach, mixed with blood. There was a cut on the right temple, not penetrating to the bone; and on the left side, over the temple and forehead, there was extensive swelling, which entirely prevented the bone from being felt underneath. Both eyes protruded, especially the left, and the lids swollen. Pupils natural. Pulse 52, weak, and fluttering. Can just answer to his name when briskly called on. There is no abdominal tenderness, or other indication of injury to the viscera from the blow received thereon.

Half-past twelve P.M. being about an hour after the accident, these symptoms went on to those of compression. He became quite insensible; breathing strongly stertorous, and 25 in the minute; pulse remaining slow and weak, 56; right pupil contracted, left dilated; lower extremities paralysed. The swelling on his head much increased, so that Mr. Key was not able to distinguish any depression of bone; he thought he felt a ridge under the cut on the right temple, but this proved to be a prominent temporal ridge of frontal bone. Judging from the experience of former cases, Mr. Key thought it most likely that the cause of compression existed on the left side, where the pupil was dilated. (The contracted pupil he has generally found attended with laceration of the brain on the same side.) He accordingly made a T incision over the left side of the frontal bone, through a thick mass of effused blood, and there discovered a fracture extending from the orbit towards the vertex, the extent of which could not now be ascertained;

the outer edge was depressed, and blood oozed from the crevice. By means of Hey's saw Mr. Key removed a triangular piece of the undepressed bone, and then raised the depressed portion a little. On the dura mater was a clot, which being removed, gave vent to copious hæmorrhage from under the bone.

During the operation the pulse rose to 80, but there was no sign of consciousness. The patient was certainly a little relieved; the breathing became less stertorous; pulse remained at 70 or 72, with more power; and the dilated pupil became natural. A pad of lint was gently pressed on the bleeding surface, but hæmorrhage did not cease till half-past six P.M. at which time he was evidently sinking. Pulse 144, scarcely felt; breathing entirely from the diaphragm, sixteen in the minute, stertorous, and mixed with gurgling from abundant pulmonary secretion. Pupils could not be examined, in consequence of the swollen state of the eye-lids.

He died at half-past seven, eight hours after the accident.

*Inspection of the body eighteen hours after death.*

**Chest.**—Left lung quite healthy; right lung filled with congested blood, and readily torn down, presenting the appearance described by French writers as found in the commencement of pulmonary inflammation. Heart contained blood imperfectly coagulated, without any distinct separation of fibrin.

**Abdomen.**—Interesting, independently of its reference to the present accident. Stomach and intestines, even the appendix vermiformis, filled with gas; stomach contained some coffee-ground fluid only—its inner coat was quite pallid; that of the intestines was likewise pallid, and under it (in the small intestines chiefly) there was extensive infiltration of serous fluid, a circumstance which Dr. Hodgkin remarked was usually connected with diseased kidneys. Kidneys were loose and flabby, and had a peculiar sweetish smell; their investing membrane could not be peeled off without tearing a portion of their substance. Urine taken from the bladder was found to coagulate by heat. Liver was pale, and distinctly lobulated and granular; the space between the pale lobules marked by streaks of congested blood, presenting altogether a singular appearance. Spleen loose and flaccid, containing scarcely any blood.

**Head.**—Effusion of blood under the integuments from the eye-brows to the vertex. Clots of blood between the bone and dura mater, which were much separated from one another—viz. from the point operated on downwards to the roof of the left orbit, and also for at least two inches to the right of this. There was no separation backwards towards the parietal bones. There was a

small tear of the dura mater opposite the depressed bone, and under it the pia mater and brain were slightly injured. Under the dura mater, all over the left hemisphere of the brain, were imperfectly-formed coagula, extending down to the base, and even into the spinal canal; these were most abundant about the sella turcica. Every where under the effusion the brain was clearly flattened. There was laceration of the anterior lobes of the cerebrum, of the anterior parts of the middle lobes, and of the anterior and under part of cerebellum. All these lacerations were greatest on the right side; the two former were opposite to fractures—the last was probably caused by the *contre-coup* being situated at the opposite part of the skull to the left temple, where the blow was received. The ventricles contained a little serum, slightly reddened.

The brain being removed, the whole extent of the fracture could be seen. It extended from the left side of the sella turcica onwards through the roof of the orbit, towards the left temple; thence upwards and backwards, along the temporal ridge of os frontis, till it joined the coronal suture: this suture was completely separated on this side as far as the sagittal suture. Here there commenced another fissure, which passed irregularly over the forehead to the right brow, through the roof of the orbit to the right side of sella turcica, reaching still farther back through the petrous portion of temporal bone, and terminating in the foramen magnum. The sella turcica and cribriform plate of ethmoid bone were broken into several pieces. Both orbits were full of blood.

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#### BOOK RECEIVED FOR REVIEW.

Two Lectures on some of the Physical Signs of Diseases of the Chest: delivered before the Members of the Portsmouth Philosophical Society in January 1829. By John Forbes, M.D.

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#### NOTICES.

Mr. Elderton's paper has been unavoidably delayed.

We cannot insert the Letter about the London University—at all events without the name.

The paper proposing amputation and dissecting out the absorbents, in hydrophobia, cannot be inserted. There is no evidence that such practice would be useful, and no one would submit to it, if there were.

N.B. Those gentlemen who experience any difficulty in getting the Gazette, may rest assured that the fault lies with their booksellers: it is always out on Friday at One o'clock.

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W. WILSON, Printer, 57, Skinner-Street, London.

# THE LONDON MEDICAL GAZETTE,

BEING A  
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OF  
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SATURDAY, JULY 24, 1830.

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## LECTURES ON SURGERY,

*Delivered at St. Bartholomew's Hospital,*

BY WILLIAM LAWRENCE, F.R.S.

### LECTURE LXIV.

*Caries of the Vertebrae—Incurvation of the Spine—Injuries and Morbid Affections of Nerves—Neuralgia—Fracture—Tic Douloureux—Anomalous Nervous Affections.*

THE vertebral column, gentlemen, is subject to an affection of a very different nature from that which I described to you in my last lecture, agreeing with it only in the circumstance of producing a change in the direction of the bony column, causing a curvatura of the spine. This affection, like that which I described to you in my last lecture, is chiefly incidental to young subjects, but it is not, like that, confined to them: it happens, although rarely, after the period of puberty, and may take place in persons comparatively advanced in years. It is *caries* affecting the bodies of the vertebra, a disease which I have already had occasion to describe to you generally, and respecting which I have only now to point out the particular circumstances which characterize it when it is seated in the spine.

This disease attacks only the *bodies* of the vertebra, that is, it attacks that part of the bony structure of the spinal column which is most frequently the seat of this affection in other parts of the skeleton—the cancellous or spongy texture;—it does not affect the processes of the spine which belong to the firm or compact bony tissue. It commences with pain of the affected part, sometimes with more or less swelling of the soft parts immediately surrounding the seat of disease, with uneasiness on pressure. After a certain time, the bone, which in the first instance is inflamed, ulcerates, and goes into the state of *caries*. In the progress of the disease, this ulcerative process affects

the bone so considerably that large portions of one, two, or more bodies of the vertebra, are actually destroyed by it; and when we come to examine such cases after death, we find a considerable chasm or gap in the vertebral column, in which, occasionally, portions of the bodies of the vertebra are found completely loosened and detached.

[Mr. Lawrence then presented a specimen, and said, the spine which I now shew you exhibits the kind of devastation which this disease is capable of producing in the anterior part of the vertebral column. Sometimes it seems to commence in the intervertebral fibro-cartilages, and sometimes in the bodies of the vertebrae.]

Caries in the spine, like the same affection any where else, affects the soft parts immediately contiguous to the diseased bone, and produces inflammation in them, which terminates in abscesses, and the matter finds its way to the external surface, frequently taking such a course as to lead to its appearance externally at some distance from the situation of the primary affection. Hence abscesses formed in the neighbourhood of an affected part of the spine may present themselves at a considerable distance from it; and it is chiefly in cases of this kind that we see those collections of matter formed which constitute *psaos* or *lumbar abscesses*. Now you will observe that where a considerable portion of the bony column which has to sustain the head and the upper parts of the body is thus absolutely destroyed by disease, that the weight of those upper parts will press down the superior part of the column against the inferior part, so as to fill up, by this approximation, the vacuity that is created by the ulcerative process; and the consequence is, that after the destruction has gone on to a certain point, the spine bends forward and becomes crooked. But the curvatura thus produced essentially differs in its nature and direction from that which takes place in consequence of the ricketty affections which I described to you before. The curvatura in this case is always a



bending forwards, while in the other case (rachitis) it is to one side; and you observe if you look at two trunks, one of which is affected in the manner that I mentioned to you in my last lecture, and one that is affected by the curvature that I am now describing to you, that the contrast is very remarkable.

[Mr. Lawrence illustrated this by two specimens, and said, this specimen is curved laterally, from a general softness of the bones; and you observe that the irregularities, of which there are more than one, are all either to one side or to the other. In the second trunk, which is affected by disease of the vertebræ, there is a single bend, and that is directly forwards, so that it produces an angular prominence of the spinous processes at one particular point: this, therefore, is called *angular curvature of the spine*, in contra-distinction to the other affection, which is called the lateral curvature of the spine. Here is another (a third specimen) spine bent in this way. You observe that it is a direct angular incurvation forwards. Mr. Lawrence also presented other specimens, shewing the disease in its various stages. The first was a specimen in which could be seen the softened state of the bones of the vertebræ; the bodies were already crushed, and giving way under the weight of the parts above. Secondly, a specimen in which the affection had gone still farther. Thirdly, one where the intervertebral fibro-cartilage was affected. There was a curvature produced by the absorption of one of the intervertebral fibro-cartilages, accompanied with a gap in the column].

Now when you see the extensive destruction which is exhibited in cases of this kind during the progress of the disease, and consider how important a part of the frame it is which is thus disorganized, you will be ready to conclude that the powers of nature will not be adequate to put a stop to the disease, and to repair the ravages that have been thus caused. Indeed, the powers of nature do not go to the extent of repairing this loss; but if the disease stop, which it may do either spontaneously or in consequence of the treatment that we pursue, the powers of nature are sufficient for repairing the loss in such a way as, with the sacrifice of the proper figure of the trunk, to allow of the restoration of health, and of the recovery of the general powers of the frame, and this is accomplished entirely in consequence of the curvature. The curvature, or incurvation forwards, is a necessary step in order to fill up the deficiency produced by the loss that has been occasioned by ulcerative absorption. Those bodies of the vertebræ that have thus been partially destroyed, cannot be restored; but as the spine bends forward, the upper part of the chasm comes in contact with the lower, and an imperfect kind of ankylosis

ensues: some additional bony matter is thrown out, which unites the two surfaces of the vacuity—consolidates them: if I may use the phrase, soldiers them together in an imperfect way, but yet so as to give a sufficient degree of solidity to the part to enable it to support the weight of the parts above, and to admit of the ordinary motions of the trunk.

The curvature, therefore, here, you observe, is really a necessary part of the curative process; you cannot have the disease brought to an end, where it has gone to a certain extent, with the preservation of the straight figure of the spine; nor when the curvature has once taken place can you entertain any expectation of restoring the natural configuration of the parts. In the early stage of lateral curvature of the spine it may be entirely removed—the figure of the back bone may be restored to its former straight state; but nothing of this kind can be accomplished in cases of incurvation forwards, which is produced by carious disease of the bodies of the vertebræ, and it is totally in vain to attempt it.

You will naturally conclude that this extensive disease of the vertebral column must be attended with more or less serious affection of that part of the spinal cord which is included in the diseased portion of the bony canal. In the commencement of the affection the irritation of the spinal cord produces pains, cramps, numbness, spasmodic twitchings, convulsions of the various voluntary muscles that receive their supply of nerves from that part of the spinal cord, and this affection often extends to the muscles which derive their supply of nerves from that part of the cord which is below the seat of disease; in fact, these effects are not confined to the voluntary muscles, for, in consequence of the connexion which exists between the spinal nerves and the ganglia from which the contents of the thorax and the abdomen derive their nerves, the functions of the various organs of circulation, respiration, and digestion, are often more or less seriously affected in the same way, in consequence of pressure taking place in a certain part of the spinal cord.

In the early stage of the affection, then, these effects are seen in altered sensation, particularly in painful feelings and in cramps, in twitchings, in convulsive affections of the muscles; but as the disease advances, and more particularly in some cases where, in consequence of the approximation of the upper to the lower part of the chasm, pressure comes to be produced upon the spinal cord, then the affection shews itself in paralysis, in loss of motion, and in loss of sensibility in all the parts below the seat of disease; *paraplegia* in fact ensues. The patient, in extreme cases, loses sensation in the pelvis

—loses all power of motion in the lower extremities, and loses the control over the muscular coat of the bladder—over the sphincter muscle of the rectum—so that the urine and the feces pass away involuntarily.

[Mr. Lawrence then presented a specimen where a natural cure had taken place, and said that if they came to reckon the spinous processes they would find that about four bodies of the vertebræ were gone—entirely destroyed by the ulcerative process. He also presented another case of the same kind, where also about four bodies of the vertebræ were gone, and a cure, by a kind of imperfect anchylosis, had ensued.]

The *treatment* of caries of the vertebral column is the same as that which I have already had occasion to describe to you in speaking of the treatment of caries generally. In the commencement it must be antiphlogistic; you must adopt those means that are calculated to diminish the inflammation which forms the primary stage of caries, and which precedes the stage of ulceration: the local abstraction of blood, with other mild antiphlogistic measures, are what will accomplish the purpose. Whatever means, however, you adopt, *rest* of the trunk of the body in the horizontal posture is absolutely essential as an auxiliary measure. You will easily perceive that if the weight of the head and upper parts of the body is constantly bearing upon the bones in this condition of disease, and if the muscles that are attached to the various processes of the vertebræ are also acting, there must be a constant source of irritation going on, tending to keep up and aggravate the disease. Rest, therefore, in the horizontal position, is an essential part of the treatment of this case, from the very commencement of the inflammatory stage of the affection until the period when the cure shall be effected by anchylosis. Here, you observe, there is a very material difference in the treatment of that disease of the spine which produces *angular*, and that which produces the *lateral* curvature. I have mentioned to you that exercise of the frame, and all the circumstances which are calculated to invigorate it, and particularly free and varied exercise, which may call into action and strengthen all the muscles of the limbs, constitutes an essential part of the treatment of lateral curvature, while the same proceeding would not only be inapplicable but highly injudicious, and, indeed, excessively detrimental in the treatment of the other affection.

When the inflammatory symptoms are put a stop to by this course of proceeding, we then come to the consideration of arresting the disease by means of counter-irritation, respecting which I have nothing particular to add to the observations that I have already made:—the caustic-issue, the seton, and the moxa, are the most eligible means

of accomplishing the object in this instance. On the continent the actual cautery is applied for that purpose.

I should observe to you, however, that you are not to consider it necessary to have recourse to these means in all cases. This is an affection incidental to scrofulous subjects, to those who are naturally of a weak constitution, and the disease itself is a source of great irritation to the frame. There are weakly subjects suffering under this complaint in whom the general powers of the system would be lessened by irritation from the employment of any mode of counter-irritation. There are certain instances, therefore, in which you would be prevented by that circumstance from having recourse to any measure of this kind, and where you would be contented with adopting that mild antiphlogistic treatment that I have described to you; keeping the trunk at rest, and employing general means for invigorating the frame, such as residence in pure air, attention to diet, administering steel and bark internally; and, in fact, that general and medical treatment which is calculated to restore the strength. You will be satisfied to use those means without adding to them any measures of counter-irritation.

#### *Wounds and Diseases of Nerves.*

When the *nerves* are divided by a wound, if the divided extremities remain in contact, they will become united like any other of the soft parts of the body; the nerves, in fact, will grow together. It has been questioned, under these circumstances, whether the substance which thus joins together the divided ends of a cut nerve be really a nervous structure or no: however, we find that when the ends of a nerve that has been divided are thus re-united, the nerve recovers its functions, that it has the power again of conveying sensation and volition; and, therefore, we find that the medium of union at all events answers all the purposes required of it.

There is nothing peculiar in respect to the *symptoms* produced by wounds of nerves. In the case of amputation of the thigh or arm, you have all the large nervous trunks belonging to the limb included in the section, but there is nothing different in the progress afterwards in the wounds thus made, nor in the immediate symptoms between such wounds and the perpendicular division of any soft parts of the limb in which you might not divide any nervous trunks of consequence. It has been sometimes supposed that the puncture or partial division of a nerve is capable of producing peculiar symptoms; and the serious consequences which have occasionally ensued from venesection have heretofore been commonly attributed to the wounds of cutaneous nerves, to punctures of the branches which are situated be-

tween the surface of the skin, and the vein in which venesection has been performed. In the great majority of instances, the ill consequences arising from venesection consist of inflammation of the vein that has been wounded—phlebitis;—or of erysipelas, and particularly phlegmonous erysipelas, and all these are serious enough. I fancy, however, that the instances are extremely rare in which any ill consequences from venesection can be clearly traced to injury of a nerve;—yet I would not venture to say that there are no such cases. For instance: I had a lady under my own care, who came to me from a remote part of England, in consequence of having suffered for many months from the existence of a painful affection of the fore-arm and hand, which was consequent on bleeding. She did not suffer from the operation of venesection at the time, nor did she experience much inconvenience for a few days after it had been performed; but then there gradually came on a very painful state of the whole of the limb below the seat of the venesection. For this she had undergone a variety of treatments of a tolerably active kind—such as the application of leeches to the limb, blistering, rubbing it with irritating substances to bring out eruptions, and a great variety of active means of that character. From this treatment, however, it seemed, by her own account, that her sufferings had been rather aggravated than relieved. When she came to me, the whole of the fore-arm and hand were so excessively sensitive that she could not bear any one to come near her. I recollect, on going towards her to ask what was the matter, that she quickly drew back, as if she were afraid of being touched;—she was so much alarmed that she would not allow me to assist her in unwrapping the arm; she seemed, in fact, to be afraid of exposing it to the air. After taking off the various envelopments in which it was enclosed, I found that the part was not materially swelled, but bore the marks of the active surgery which had been tried upon it; and I found she was nearly destitute of the power of moving the wrist and fingers. It was a serious evil, for it was her right hand and arm, and she was totally unable to do any thing like writing or needle-work. She could, perhaps, make some little trifling motion with her fingers and thumb, but could not bear her arm to be touched—not perhaps that it was so excessively sensitive, but the pain which was occasionally experienced in it made her afraid of any thing approaching it. She had a furred tongue, a disordered state of the stomach and bowels, and she was (as you may well suppose a person would be after this long suffering) much out of health. There was no other cause in this case to account for the sufferings she endured, except it were some particular state of the

nerves consequent on the operation of venesection; and the nature of the symptoms generally, the violent and constant pains of the part, and the sufferings arising from it, clearly shewed that the nerves, at all events, were essentially involved in the affection. I recommended her, in the first instance, to lay aside all the coverings she had been in the habit of employing, so as to allow the part to be exposed to the external air; and when she had become accustomed to the contact of the air, that she should commence sponging it over with tepid water so many times a-day, gradually diminishing the temperature until she could bear it to be sponged with cold water. That was the *local* treatment; and the *general* treatment consisted in the regulation of her diet, and in the adoption of simple means for bringing the stomach and bowels into a healthy state. In the course of a few weeks, under these means the arm got almost entirely well. I do not know how long it was actually before she completely recovered, but I think in less than two months she wrote me a note to thank me for the cure: this was the first time she had made use of the fingers in writing after the occurrence of the affection, and a very well written note it was, in point of penmanship.

When nerves have been divided, as in the operation of amputation, the extremities which are left swell out into a kind of bulb, and a sort of oval tumor forms—or rather the ends of the nerves swell into a kind of oval bulb, perhaps about the size of a nut (a filbert, in the case of a large nerve), and this is found to possess very considerable firmness, sometimes approaching almost to a cartilaginous texture, so that you find it cuts with difficulty and makes a noise under the edge of the knife as it is divided. There are instances in which the extremities of the nerves thus enlarged seem to produce very painful symptoms after amputation. Whether it arises from the extremities of the nerves being involved in the cicatrix, which is the result of the operation, or, as in certain cases, from the end of the nerve being, by the contraction of the cicatrix, pressed against the sawn end of the bone, is doubtful; but, in many instances, very painful sensations are experienced, after a certain time, at the end of the stump, and in some cases confined to a particular spot, so as to indicate that this depends upon the affection of some nerve connected with a certain part of the cicatrix.

Mr. Langstaff has paid considerable attention to this subject. He has examined the state of several stumps—examined the cicatrices in various persons after amputation, and he has found this bulbous swelling in the nerves, and particularly in instances where the patient had suffered from the painful affection that I have mentioned;



and he has thence been led to infer that these painful swellings depend, in some measure, upon the circumstance of the divided extremities of the nerves being implicated in the hardened cicatrix, and thus experiencing a degree of irritation which leads to the alteration that I have mentioned, and which also produces the painful affection in question. In some one or more instances I think he found it necessary to amputate higher up, in consequence of the extremely painful state of the stump—in fact, the almost intolerable agony which patients have experienced under such circumstances as I have described to you. He mentions a practical rule, which is certainly of the highest consequence, in order to avoid such an occurrence, and a mode which he has followed himself with the best results—that of cutting off with a pair of scissors, after the amputation, a part (say half an inch, or an inch) from the extremities of the divided nerves, so that they shall not be exposed to this source of irritation. He says, where that rule is observed, the consequence in question does not take place.

Nerves are subject to the development of tumors in their substance, just as tumors may grow in any other soft part of the body. This, however, is a rare occurrence; so much so, that I have not seen any instances of it in the living subject, although I have seen specimens of it in museums; and therefore I cannot say much about it. I have only to tell you that such tumors may be developed in the nerves—principally in the nerves of the upper and lower extremities;—the popliteal or its branches, in the leg, and some of the branches running along the arm; and that they are generally of an oval shape. The nature of the tumor is pretty clearly pointed out, in the first place, by its position in the situation of the trunk of a large nerve; in the next place, by the painful sensations in the distribution of the nerve which are caused by the pressure of the tumor; and thirdly, by the circumstance of the tumor being easily moveable laterally, from side to side; being, however, confined in a longitudinal direction, in consequence of the connexion of the two ends.

The treatment of these consists in their extirpation by operation. They may proceed to a considerable size.

[Mr. Lawrence here exhibited a book, in which there was a figure of one of these tumors, which was as large as an orange. The tumor was on the popliteal nerve.]

Those gentlemen who wish for more information respecting these tumors, may refer to this work, which is the second part of vol. iii. of the Medico-Chirurgical Transactions of Edinburgh; in which will be found a paper, written by Mr. Wood, of Edinburgh, on *Neuroma*—for he gives that name to tu-

mors found on the nerves—and where he has collected a great number of cases from various authors, and brought them together.

### *Neuralgia—Tic Douloureux.*

Nerves are liable to inflammation, and this affection is characterized by the great pain which it produces—in many cases, the almost intolerable agony that accompanies it. The nerves are also liable to affections in which nothing like inflammation of the part can be traced—where, to use our technical language, the nerve is said to be merely *functionally disordered*—where pain, or altered sensations of various kinds, is the principal feature of the complaint. These affections of the nerves, from the circumstance of pain being one of their principal characters, have been denominated *neuralgia*—*pains of nerves*.

These are diseases which do not in general terminate fatally, so that we have not much opportunity of investigating their pathology by examination after death; consequently the pathology of these affections is but imperfectly understood. Indeed it must be obvious to you that inflammation of a nerve—that a case in which the nerve is actively inflamed—ought to be distinguished from another instance in which it is merely the seat of a painful sensation; yet both of these, in technical language, would come under the same denomination of neuralgia.

Now all nerves are not equally liable to these affections. It has been generally considered that neuralgia is only incidental to the *voluntary* nerves—those that are distributed to the parts which are under the influence of the will; but we are not perhaps justified in saying this positively—at all events, however, we know so little of neuralgic affections of internal nerves—that is, of those nerves which proceed from the different ganglia to the viscera—that they may be almost said, in reference to our state of ignorance on the subject, not to exist. Certain nerves are more liable to this affection than others. Those most exposed to external influence, to violence, to injuries of different kinds, and those most habitually exercised, in a state of the most constant excitement, are the nerves that suffer most frequently. The great sciatic nerve is one of these, and the branches of the nervus trigeminus in the face are the two which are much more frequently the seat of neuralgic affection than any others in the body.

The affection of the sciatic nerve—*sciatica*, as it is called—is an example of inflammation of the nerve from which it derives its name; or at least we frequently see that form of affection in this nerve. The disease here is characterized by severe pain, which is seated in the trunk of the nerve—which ex-

tends along the course of the trunk, and is then traced in the course of its various ramifications. Sometimes, however, the pain seems to begin in one of the branches, and to shoot upwards towards the trunk, as well as downwards in the distribution of the nerve. This pain of the nerve is aggravated by any motion—by the exertion of the part—by any particular position in which the part is subjected to pressure—by such indulgences in diet as are attended with excitement—by external heat, and by all the various circumstances that are capable of aggravating inflammatory affections.

The disease which, in the first place, exhibits an acute-kind of character, marked by the symptoms that I have mentioned, lasts a long time—becomes chronic, and then shews itself more in a painful affection than in those symptoms which denote acute inflammation of the nerve; and then the pain will, perhaps, come on in fits;—there will be times when the patient is comparatively free from it. It is attended with a considerable imperfection in the state of motion in the limb, and hence the muscles waste away, the limb shrinks, and ultimately, if the disease lasts a long time, the patient falls into a state in which he has little use of the affected member.

Now, on examining these cases after death (which we seldom have an opportunity of doing, except in cases of old and chronic affection), we sometimes find the trunk of the nerve exhibiting marks of previous inflammation—that is, the nervous cords of which it consists are surrounded by a thickened, indurated, cellular membrane, and the nerve itself seems expanded—in consequence, no doubt, of the effusion into the cellular membrane that connects the filaments together. This state will be found more or less extensively in the trunk of the nerve.

In the acute stage of this affection the local loss of blood is advantageous. Blood may be taken by cupping or by leeches; and other means, of an antiphlogistic character, must be combined with the loss of blood. Rest of the affected part is absolutely necessary. This is a case, however, which cannot be so effectually controlled by the loss of blood as many other inflammations; you may benefit it to a certain degree, but you will find that the painful affection of the nerve will probably go on, and if you continue to take blood, either generally or locally, you will not find a corresponding benefit—in fact, beyond a certain point, the loss of blood probably aggravates the affection; for whatever diminishes the local power generally aggravates the complaint. The loss of blood, therefore, at a period beyond the commencement of the disease, should be performed in a moderate way. Counter-irritation, particularly by the application of blisters along the

course of the affected nerve, is ascertained, by general experience, to be an advantageous mode of treatment in this affection. You apply blisters over the course of the trunk and the affected ramifications of the nerve in succession, applying first one and then another as soon as the sore left by the former is healed.

In the chronic stage of the disease you are confined pretty much to a general mode of treatment. The exhibition of alterative doses of mercury, with mild aperients, and the means which are calculated to restore the general health—change of air, residence by the sea-side, warm bathing, together with the various modes of counter-irritation—constitute the general assemblage of means which we trust to in these chronic cases.

The severe suffering of the patient leads us, both in the acute and chronic stage of this affection, to have recourse to narcotics, to alleviate the pain—to give rest at night. In conjunction with these, in the chronic stage of the affection, and with the other means that I have mentioned, the employment of sarsaparilla internally, particularly in individuals who are much reduced by long suffering, is often attended with advantage.

The branches of the nerves which are distributed upon the *face*—the branches of the fifth pair—are very frequently the seat of neuralgia which cannot be called actual inflammation of the nerves; and this form of affection, in that particular instance, is called *tic douloureux*, *neuralgia facialis*—neuralgia of the fascial nerves. The affection is often seen in one particular branch—in the infra-orbitary, in the supra-orbitary, or that pair of nerves which comes out of the foramen near the chin. The pain, which is most intense and severe, commences in the trunk of the nerve, and shoots along the various branches. Sometimes more than one branch is affected. The pain is by no means constant;—the disease, in fact, consists of fits of pain and intervals of pretty complete ease. The patient may be free from pain for weeks or for months together; and this is a circumstance which makes us extremely uncertain as to the actual cure of the disease. We do not know when a patient can be said to be cured of the affection in this form of the complaint, because the absence of the symptoms may be one of these intervals; and after all the symptoms have been apparently removed, if I may use the expression, we shall find all of a sudden that they come on again. Now words are hardly adequate to describe the varied sensations of a painful kind, and the excessive degree to which these arise, in cases of *tic-douloureux*; sometimes the patient experiences a kind of electric shooting or darting pain through the parts. These fits are common in the course of the day, and may be brought on by trivial circumstances

—such as the exercise of the affected part in the act of mastication, deglutition, articulation, or by a little cold air, or some such slight external influence. These paroxysms of pain are so severe, that patients of the greatest resolution, and of the strongest mind, cannot command themselves; they often scream out with pain. Thus they will put their hands to the affected part, and their eyes will become filled with tears; and, in fact, such convulsive motions are observed, not only about the face and the neighbourhood of the pain, but extend their effect to the whole of the body, which is a most unequivocal sign of the great agony that is experienced. Patients go on suffering this way for years—a proof that the complaint is not very often fatal. I have known patients suffering for a long course of years under an affection of this kind, and dying at last at a good old age—the length of their life not having been apparently abridged by the complaint, however severe their sufferings have been during their existence.

The *causes* of the complaint are very obscure. In some instances, other painful attacks about the face bring on an attack of tic douloureux; thus it has been found to arise from a carious tooth. In some instances, diseases of the bony canals through which the nerves pass have been found to be the causes of these painful sensations. That seems not an improbable source of the disease; for if there be a state of disease in the bony canal, from the constant irritation thus kept up on the trunk of the nerve we can account for the affection.

When we come to examine cases after death, however, we often find nothing that will enable us to account for the sufferings of the individual.

I remember examining a gentleman who had been for a great number of years the subject of tic douloureux. In making a free dissection of the face, and taking out those branches of the nerve that had been the seat of the affection, I could trace no alteration, nor any disease, either of them or of the brain, that imparted the information I sought. But that sort of negative evidence in these cases is not quite satisfactory, because in order to say that there was no state of disease in the nerves, it would be necessary to follow up the nervous filaments through their bony canals, and that would require a very long dissection. I believe that hardly any case has been examined in that way.

We are much at a loss in the *treatment* of this affection; in fact, there are a great number of remedies for it, and you generally find that to be a proof that none of them are of admitted and ascertained efficacy. It has been said that this disease will be quieted

and put an end to if you regulate the state of the stomach and digestive organs, for you very often find these parts disturbed; but the truth is, if a person have a clean tongue, and his stomach and digestive organs are in a good state at the commencement of the complaint, the paroxysms of pain which the patient suffers are enough to disturb them. Thus, in fact, there is no simple mode of treatment; for if there were, its efficacy could be depended upon, and the course of treatment would be well known.

Narcotic remedies, of course, have been tried in all their varieties—opium, hyoscyamus, conium, and every thing that can be regarded as acting upon the nervous system, and soothing the pain, has been employed. Of these, I must observe, according to my own experience, that the only one on which we can have any reliance for checking the paroxysms, is conium. I have seen in several cases, when it has been given largely, and at short intervals—and it must be given in such doses as to produce some of its peculiar effects on the nervous system—that it has put a stop to the paroxysms, and for such a length of time that I have thought it has cured the disease; but in some instances, where persons have remained well for several months, and even, in one case, for more than a year, the pains have again shewed themselves, but the agony has been considerably controlled by it. As means of a narcotic kind, for controlling the disease, I therefore place more reliance on conium than on any other of that class.

You perceive, of course, that in using means of that kind, you must combine with them suitable measures for preventing their unfavourable action on the stomach and alimentary canal, and must take necessary steps to ensure the regular performance of the functions of these important organs. Mercury, arsenic, bark, oleum terebinthinæ, these have all been tried in all quantities without good effect. The carbonate of iron is a remedy that has recently been in vogue, exhibited in large doses, about half a scruple or a scruple, carried up to a drachm or more, three or four times in the course of twenty-four hours; and in certain instances, it has been supposed that it has produced beneficial effects. There are many instances related in which a complete cure of neuralgic affection has been ascribed to the employment of carbonate of iron in that way.

In the cases of neuralgic affections of the nerves of the face, a surgical operation has sometimes been performed—that of cutting through the affected nerves, and in certain instances a temporary benefit has been derived from the operation, but in general the disease has come on again; so that now the plan of performing that operation has pretty generally been abandoned.



*Various Nervous Affections.*

Sciatica and tic douloureux are two cases of neuralgic affection of a very marked character, but a great number of other instances of affections that must be ascribed to the nerves as their seat, are by no means of so strongly marked a character as these; yet they are of considerable importance, in consequence of the suffering and the inconvenience they produce to the patient. There is a numerous class of affections in which pain, or altered sensation of various kinds, is produced without the existence of any local disease to account for them—any thing of an inflammatory kind, and hence arises the term, in common language, of what is called *nervous diseases*, which does not point out very definitely any thing in the seat or nature of the disease, but is rather to be understood as a negative term, implying, in the case in question, that there is no inflammation.

The nerves convey the determination of the will;—they are the instruments of motion as well as of sensation; so that various cases in which the movements of a part are disordered, ought, perhaps, also to be classed under the head of neuralgia. If we take this view of the subject, we shall include a much larger assortment of cases under the head of neuralgia than has hitherto been described under that term, the word neuralgia having been confined to instances of a very severely painful affection of the part. Now this larger acceptance of the term is more commonly used than formerly. There is a work lately published by Mr. Teale, of Leeds, upon Neuralgic Affections of the Nerves proceeding from the spinal cord and the various ganglia to the viscera of the thorax and abdomen, in which he employs the term in this enlarged sense. Thus neuralgic affections will consist of cases in which, without any evidence of local disturbance of an inflammatory kind, there is pain, or there is altered sensation of various kinds, or there is impaired movement, or an altered kind of motion of various descriptions.

In considering this affection, you must bear in mind the structure of the nervous system and the relations existing between the nerves and other parts. The nerves at one extremity are connected to certain large masses—that is, the brain, the spinal cord, or the ganglia; they pursue a certain course through the various parts of the body, and then they are distributed to certain organs, where they become the instruments of sensation and motion. Now in investigating any case in which the sensation or the motion of a part is affected in the way that I have mentioned, without any local disturbance of an inflammatory kind or any organic change, you must not direct your attention simply to the part in which the

sensation is said by the patient to reside—you must observe the course of the nerve;—you must also investigate the state of the nervous mass to which the other extremity of the nerve is connected. It is to the expanded extremities of nerves on the various organs, and it is from an impression on these that sensations are ordinarily to be ascribed. The course of the nerve, and the connexion which it has with the principal nervous masses, are not under ordinary circumstances exposed to any kind of impression. When we hear of disease in the nervous system, or when from any disease affecting the nerve in its course, irritation arises, in either of these cases we find it is referred by the patient to the sentient extremity of the nerve, although there may be no change whatever—no kind of disease existing there. We often find, therefore, that the cause of disease in these nervous affections is in a part of the body very remote from the situation in which the patient describes the symptoms to exist, and in order to discover this affection, which often is not very obvious, you must examine the state of the nervous mass at that part where it is connected to the supposed diseased nerve, and examine carefully the progress of the nerve from that part to its termination on the affected organ, in order to find whether these parts are sound, or whether they are the seat of any kind of disease. Until you have made this examination, you cannot form a satisfactory judgment respecting the source of the local symptoms.

Now as to the head—the instances are numerous in which an affection seated there produces effects in the state of motion in distant parts. You will have squinting, double vision, and various other affections of the sight, produced in consequence of disturbance in the brain, which proceeds to the occurrence of apoplexy. You may have paralysis of the levator palpebræ superioris from affections of the head, and there are instances in which you have impaired motion from these causes.

I lately had a case of this kind under my care. It occurred in a lady, in whom numbness of the right foot took place. She did not pay much attention to it, for the sensation was not a very troublesome one. After it had lasted for two or three weeks, numbness of the right hand occurred. She described the sensation by the term *numbness*, as being the nearest word she could use to convey an accurate notion of what the sensation consisted in. It was a peculiarly dull sensation in the part, quite different from any ordinary feeling, but it was not attended with any impaired motion either of the hand or foot, for she was able to execute all the motions of these parts. I saw her after the symptoms had lasted four or five weeks, and

I found her enfeebled, as she said, from the means employed for her. She had taken opening medicines, and had had her diet regulated: she felt weak, and had lost flesh. She complained of numbness in the two parts that I have mentioned; but there was no evidence which could lead one for a moment to suppose there was disease in the hand or foot. My attention was principally directed to the state of the head, to see if I could find any thing there to account for the affection; for I had no reason to suspect that disease existed in the spinal cord. Upon accurate examination it appeared she had something like pain in the head, and upon feeling the forehead I discovered somewhat of increased heat in that part. Her pulse was small and feeble, but that was naturally the case. In this instance the abstraction of blood from the head, the application of cold—particularly to the forehead, the employment of mild aperient medicines, and a regulated diet, and subsequently the application of blisters to the back of the neck, and the rather free use of mercury, but not carried so far as to affect the mouth, completely removed these sensations, and restored the patient to health. But a difficulty occurred in treating this case from the apparent inconsistency between the feeble and reduced state of the pulse with her own sensation of feebleness, and the measures that seemed necessary to remove the local affection of the head; and, indeed, in the employment of these measures she once had an attack of such violent faintness as to require the administration of ammonia and brandy; yet within forty-eight hours of that attack she experienced great relief indeed from the loss of thirteen ounces of blood from the back of the neck. Her own feelings of relief from the loss of blood, together with the intelligence of her husband, to whom the case was explained, enabled us to pursue that treatment which the ignorance and prejudice of patients, under many circumstances, would not admit of. Now this is an example of alteration in the state of sensation in a remote part of the body in consequence of some disease going on in the head.

The pains and convulsive motions—the cramps and uneasiness that are experienced in consequence of concussion of the spinal marrow, or in consequence of injury to the spine from caries of the bodies of the vertebrae—are examples of neuralgic affections proceeding from causes affecting the spinal cord. And I must here observe to you that Mr. Teale, in the work I have mentioned, ascribes a large class of cases in which there is painful affection, or altered sensations of various kinds occurring either in the neck, or in the trunk of the body, or in the limbs, to disease existing in the spinal cord; which disease, he says, in many cases, is evidenced by an external tenderness on pressure, that

can be ascertained by the examination of the surgeon; and he mentions also that the various affections, both of the contents of the thorax and the abdomen, are, in his opinion, to be ascribed to similar affections of the ganglia situated in those cavities, and with which, he says, an affection of the spinal cord is always co-incident; so that you have the same indication of external tenderness pointing out the disease in these ganglia as you have where the disease exists in the spinal cord. I think you will find the views that this gentleman has taken, and the cases that he has related, very well worthy of your attention, and therefore I am satisfied with merely referring to his work without entering more particularly into it. In the cases he has referred to, he finds those painful sensations which in several instances had lasted for many months, and even years, had been quickly and effectually relieved by the local abstraction of blood from the tender part of the spine, and the application of blisters to that situation.

In the same way you have local nervous affections arising from causes which act upon the nerves, in their course from the central mass to the organs of the body. Every one has experienced in his own person the effect, which is called the foot or the leg *going to sleep*, produced by pressure on the popliteal and sciatic nerve.

I remember two instances of aneurism of the axillary artery that came under my observation, where in the first place, and for a considerable length of time, the nature of the case was totally mistaken. The symptoms consisted entirely of irritability in the upper arm, the fore-arm, and hand, in fact, pain of the most violent kind, rendering the patients unable to use the upper extremities, so that they were considered to be rheumatic attacks, and indeed, I believe in one case, when the state of the patient's neck was first seen, I observed a red surface where he had been blistered, under the idea of removing the pain in that way. It appeared that these uneasy sensations arose from the development of the aneurismal tumor amid the axillary plexus of nerves; and the death of these patients enabled me to ascertain that the aneurismal tumor not only pressed upon the nerves, but that some of them were completely flattened out into the form and thickness of tapes by such pressure. A tumor developed any where in the course of the nerves, will cause painful sensations in the extreme distribution of the nerves. Mechanical injuries of various kinds in the trunks of nerves have had similar effects. It is necessary, therefore, that you should carefully attend to all these points in the investigation of those obscure affections which, in common language, are called *nervous diseases*, but which we denominate *neuralgia*.

I should observe to you further, that some instances of this peculiar pain are so extraordinary, that we are at a loss to give a satisfactory account of them. There are some instances in which pain in certain parts of the body seems to arise from a disordered state of the alimentary canal, and which has ceased when that has been relieved. I remember a case in which I was totally at a loss to explain the reason of the affection. It was communicated to me by a gentleman who observed the facts. A person lost part of one of his front teeth, and the crown of the tooth was sawn off, leaving the root in its place, and the lost portion was replaced by an artificial tooth, called a *pivot tooth*, where a metallic stem was substituted for that which was lost, and where the metallic stem is fixed into the cavity of the natural root left in the socket. Soon after the artificial tooth had been put in, the patient had dreadful pain in his two thumbs, and it quite puzzled the patient and those who saw him to know how to account for it, as no circumstance had occurred to him lately of a marked nature, except that of putting in this tooth. The tooth was taken out, and the pain ceased, but yet they could hardly believe that the tooth produced the pain. The tooth therefore was put in again, to ascertain the fact, when the same pain returned in the thumbs. The parties were consequently obliged either to abandon the tooth altogether, or to reduce the length of the metallic pivot, I do not know which—and then the pain ceased.

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#### THE LITHONTRIPTOR ADAPTED TO LATER DISCOVERIES\*.

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*To the Editor of the London Medical  
Gazette.*

SIR,

THE instrument of which the accompanying engraving is a representation, relates to an apparatus formed on a modification of the principle of the one I gave to the world eleven years since, with a plate, in the *Edinburgh Medical and Surgical Journal*, adapted at the same time to embrace the advantages referable to the late practical discovery of the urethra admitting the introduction of straight bodies. Without occupying the time of your readers with a detail explanatory of mere mechanical arrangement,

and which, as above hinted (with the exception of the present instrument possessing straight forceps instead of curved) would so closely resemble my former communication, I will proceed to the presumed points of acquisition more immediately aimed at attaining in my last invention, prefacing the subject, for its better comprehension, with a few remarks on the general merits of the lithontriptic process.

Happy would it be for mankind were the sufferings of future generations, as regards the complaint in question, to diminish, in a ratio corresponding to the probable progressive improvement of this invention—a prediction founded on the scope to ingenuity held out by the discovery of the urethra admitting the introduction of straight bodies, and which, as respects contrivance, is necessarily unlimited; but the truth is, that the mechanical comminution of a vesicatory concretion, howsoever ingeniously accomplished, will by no means always ensure the sufferer from a possibility of a future crystallization of its component particles; and although I doubt, with the greatest deference of opinion, whether it may not be a question how far the fragments of a comminuted calculus may not, from reciprocal friction, rather tend to prevent individual laminary deposit than favour the conclusion of their proving nuclei for future concretions; it still must remain an undeniable axiom that there are often too many collateral impediments in conjunction with calculous affections ever to leave its warmest advocates (of whom the writer has not been one of the least) reasonably to predict undeviating success from a general introduction of the lithontriptic process. It has been these impressions, to speak candidly on the subject, added to the opinions promulgated in the above correspondence, which for many years have cooled the ardour of my anticipations as regards the possibility of the lithontriptor ever authorizing the expectation of universal application.

Of the probable future success of this discovery, I have now lived long enough to observe—that after having met with the ridicule and contempt incidental to the introduction of other inventions, its just pretensions are beginning to be less precipitately and partially decided upon; and while thus progressively advancing in professional estimation, already by many has it been discovered to possess

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\* Mr. Elderton's paper is preceded by various documents establishing his claim to priority of invention. We regard this point as sufficiently proved by what we published for Mr. E. on a former occasion, and regret that we cannot insert those forwarded on this occasion.—E. G.



principles, which in spite of the occasional drawbacks it may be exposed to from ill-judged application, or deficient dexterity of the employer, must ultimately ensure its station in the catalogue of those measures acknowledged to be contributory to human relief.

Believing the generality of your readers will allow that few persons are better prepared to encounter the conflicting difficulties incidental to a discovery than the individual with whom it originated, I shall proceed to speak upon defects necessarily peculiar to the principle of the instrument, and then, by subsequently specifying its practical properties, defeat the arguments hitherto accessory to its protracted introduction.

In adverting to the following remarks, I consider I am alluding to circumstances totally unconnected with considerations affecting either the principle or estimation of lithotripsy; and of which, at no period since my discovery of the apparatus, have I ever for a moment contemplated a prospect of its successful application. The first impediment I will mention, as prohibitory of its employment, may arise from circumstances dependent on structural derangement, of which source, as frequently contributory to calculous concretions, I have ever considered the enlarged prostate, from its acting as a valvular impediment to the escape of urinary deposit, highly conducive; and when we reflect on the time of life and correspondency of age in the majority of people labouring under these complaints, we are instinctively disposed to associate the condition as the result of cause and effect.

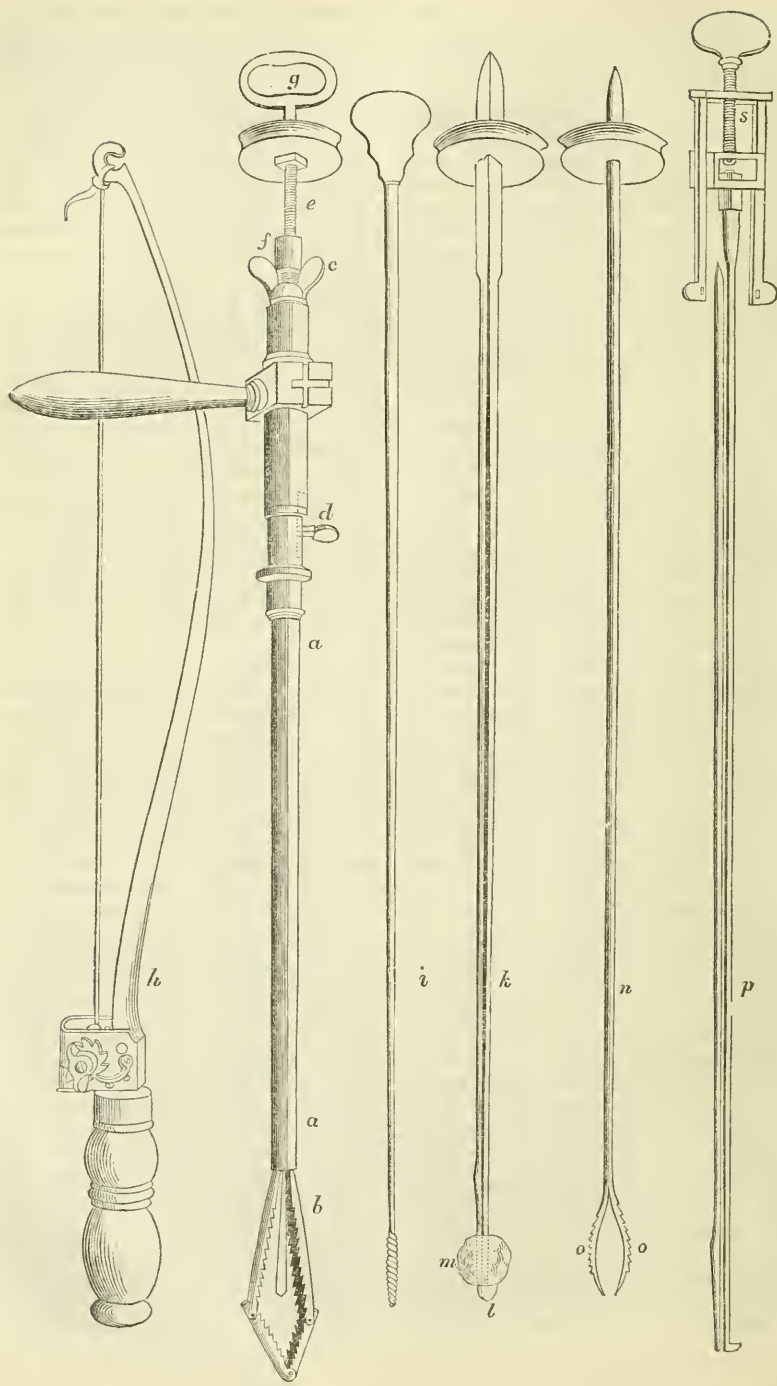
How materially the enlarged prostate will enhance the difficulty of bringing the lithontriotor into play within the bladder, and by rigidly limiting its sphere of motion correspondently increase the difficulty of seizing a stone, need scarcely be alluded to; not to dwell upon the complete occasional preclusion such enlargement may present to the bare introduction of any instrument. Stricture, either permanent or spasmodic, with an highly-irritable or inflamed condition of the urethra or bladder, may be considered additional obstacles to the successful employment of the lithontriotor.

Among the impediments to the process more immediately originating with properties of the stone, are to be pointed

ed out those dependent on too accumulated a calcareous concretion—impentrable density and chemical peculiarity of proneness to laminary separation. That circumstances of the nature pointed out, with others not detailed, must ever preclude the successful employment of the lithontriotor, requires not a thought, and therefore in no point of view detracts from those properties which in judicious and competent hands it may be rendered accessory to achieving.

The variety of principle in respect to the means of mechanical comminution which this invention presents, as remarked above, are numerous; but with none, as combining simplicity with varied means, have I been more satisfied than with that devised two years since, and which was last autumn scientifically inquired into by our judicious and highly-esteemed physician, Dr. Robertson. For the construction of the apparatus represented I am indebted to Messrs. Burwell and Co. of this town, and though not finished off in a style for practical application, is sufficiently complete to display its properties.

Anxious that your readers should acquire a knowledge of the principles of the apparatus by which I have aimed at effecting a comminution of the stone, I have prefaced the description with the following brief detail of its properties; *viz.* that the resources of the instrument, where the calculus is too hard for being crushed through the medium of either the pressure of the forceps, or force of the compressing rod, are, to reduce and annihilate the stone by rasping the surface to and fro against the four-serrated edges of the expanded forceps, by aid of the screw-rod passed into the previously drilled aperture. But in case the chemical qualities of the calculus should prevent the rod retaining the stone sufficiently firm to resist yielding to the friction of the forceps, the apparatus specified by the letter *k* is to be then employed, by which the concretion will not only be exposed to the reducing process of the serrated edges, as above described, but from the stability with which it may be held, the surface, by revolving the rod, will be brought under the additional influence and reduction of a rotatory action from the saws, and thus the principle of comminution through



the surface may be advantageously alternated.

Were it not that the design to be yet spoken of would necessarily close the process, with leaving more or less fragments from the shell in the bladder, it might from its simplicity take precedence of the measures explained above. Having secured and drilled the stone, the rod, *n*, with the expanding blades, *o*, *o*, closed, is to be introduced into the aperture, and as the outer surface of the expanding part is constructed similar to a coarse rasp, it is evident, by either working it to and fro, or submitting it to the revolution from the bow, any calculus may be excavated, the expansive property of the blades following up its work, corresponding to the enlargement of the cavity. Extraction is also another property peculiarly suited to the concave make of the blades of the forceps in the lithonriptor now spoken of.

Confident how essentially the successful employment of any instrument will depend on the discretion of the surgeon in the choice and proper application of the means afforded, I proceed with the reference to the structure, and use of particular parts:—

*a*, shews the outer circular tube of the lithonriptor, adapted both from length and size to enter the bladder by the urethra. *b*, the forceps attached to a second tube, running within the one described the whole length of the apparatus, and tempered to expand when freed from the constriction of the outer tube. *c*, a thumb-screw, which, turning on the extremity of the inner tube, causes the forceps either to expand or close, corresponding to the play given by the screw to the second tube. *d*, a catch, which, passing through a groove in the outer tube, is fixed in the inner one, enabling the operator, when holding the instrument by the handle, to rapidly expand or close the forceps, and so contribute to a facility in grasping the stone. The jointed and quadrangular construction of the forceps may be viewed as not less tending to firmly secure the stone under the several processes spoken of, than it presents a protection against any possible laceration or seizure of the coats of the bladder.

Allowing, for the sake of illustration, the calculus to be secured within the forceps, the first point to attend to would

be the acquirement of a knowledge of its extent and particular density; to accomplish which desideratum, as respects the former, we have merely to acquaint ourselves with the relative scale of correspondence between the various changes of diameter reciprocally produced by the operation of the screw-apparatus on the expansion of the forceps; while, to ascertain the depth, the drill *e* is to be passed down to the calculus, and having, by means of the graduated scale on its upper part, remarked the extent of its projection beyond the instrument, we may, by the occasional regulation of turning the small index screw, *f*, represented on the same scale, learn with the greatest precision the distance the rod may have passed before completely penetrating the stone, and consequently its exact depth. Any information in respect to specific density may be immediately appreciated by attending to the working of the drill; and this, as it must influence our prognosis of the success of the operation equally with considerations relating to size, should be duly ascertained.

*g* represents a ring for the thumb of the left hand to pass through, serving to steady the apparatus when under employ. *h*, the steel bow for working the several drills. *i*, a drill with a spiral screw, to be used in securing the stone for the purpose of its being rasped against the teeth of the forceps, as described. *k*, the apparatus for the more complete securing the stone, when the reduction is effected through the medium of its rotatory motion between the forceps from the employment of the drill bow; it consists of two semicircular rods, answering to each other, the extremity of one being furnished with a projecting catch, marked *l*; the corresponding extremity of the other is tapered to resemble a wedge. The principle and mode of using this apparatus may be thus explained: the stone being secured and previously drilled, that half of the rod first treated of, with the projecting catch, or ridge, is to be passed through the drilled aperture: which being done, the second part is to be introduced down the instrument; and as it enters the drilled aperture in contact with the half explained, it will necessarily push the ridge or catch described beyond the margin of the aperture through which it was introduced, while the second



part, from its wedge-like construction, will so combine in securing the stone as to *fix* it on the rod, leaving it to the discretion of the operator to decide whether the comminution of the calculus might not be sooner effected by submitting it to the rotatory action on the forceps from the employment of the drill bow, than the process of mere rasping it to and fro with the hand.

The practical observations of the varied densities of urinary calculi, attendant on concretions of correspondent specific properties, would seem to imply the presence of different states of crystallization; and as the principle of the apparatus *k*, already described, for firmly securing the stone, may be usefully extended to various purposes of the lithontriptic process, I have ventured to introduce it under the denomination of the compression rod, offering the following explanation of the mode of its employment. Supposing the calculus to be secured by the forceps, and an aperture to have been drilled through it, the apparatus represented under reference to the letter *p* is to be used, consisting of the rod longitudinally divided with a projecting catch on one of its points, as explained above; and as the calculus, when the second half has been introduced, will be secured from the catch, so will the frame and screw, *r s*, constructed for a temporary fixture to the instrument, by the force it will exert in withdrawing the rod, expose a small stone so secured to direct comminution between the forceps. The principle of compression, it is also apparent, may be extended by the same apparatus to the comminuting a small stone, by driving a rod forward on the body secured between the forceps.

Thus has been detailed a brief outline of the history and improvement of the lithontriptor, as adapted to late discoveries; and though induced, from precedent, to believe that what has been stated will by many be viewed as the narrative of a measure hypothetical and impracticable, I must yet, with some deference, remark that a process so essentially depending for success on such delicacy of manual tact and ready knowledge of mechanical resources, may not, perhaps, be considered in every instance as receiving a correct and unbiassed decision from the profession indiscriminately; while, for the instrument to be expertly used, it

should, in fairness to the discovery, be long and variously practised upon, under every form, in the way of experiment.—I am, sir,

Your obedient servant,

JOHN ELDEBERTON.

Northampton, June 16, 1830.

N.B.—The opinion of most of the profession, when shewn this instrument in town, was, that it was less calculated to comminute calculi than to *dilate the urethra* and *extract gravel*; and hence originated the pretended newly-invented instrument of a surgical instrument-maker, for a corresponding purpose, and which in principle, by referring to the plate given in the Edinburgh Medical Journal, it will be seen to so precisely resemble.

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#### A SUPPOSED CASE

OF

#### HYPERTROPHY OF THE HEART,

And Displacement of that Organ, from Effusion, &c. into the left side of the Chest.

By W. PRETTY.

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MR. WARDELL, æt. 42, received severe bodily injury, eleven years ago, in an attempt to escape from the back of a chaise which was being carried forward by an ungovernable horse. He was taken up in a state of insensibility; his respiration was attended with a choaking sensation, and a noise in his throat; he was bled with difficulty, and gradually recovered his senses. Two days after the accident inflammation of the chest supervened, and he was again bled, &c. The inflammation several times recurred, and one month after the receipt of the injury he spit up blood freely for a short time; and three months after was laid up with a continual fever of three weeks' duration. These complaints obliged him to be confined to his room for six months, and he has ever since been an invalid, suffering more or less from cough, dyspnoea, and pains in and about the thorax; and of late he has been quite incapable of all bodily exertion beyond a short walk;—riding over the stones increases his distress. His appetite has not been deficient, and his digestion is not much impaired;

sometimes the alvine discharges are dark-coloured and bilious. About four years back he supposes something to have burst internally, as he discharged per anum a considerable quantity of a fluid offensive matter.

In the summer of last year he first consulted me, and told me he thought that his heart was not in its right place. Upon examination I found it was beating strongly on the right side of the sternum, and not in its natural situation. His symptoms were those of great dyspnœa, increased upon exertion; some cough, and much severe pain. He obtained but little sleep, could not lie down well in bed, and not at all upon his right side. The pulse was frequent and feeble. He had been compelled to take opiates and aperients; he was emaciated from his long and severe sufferings.

Six months ago, Dr. J. Johnson favoured me with his opinion, which was as follows:—"The whole of the left side of the chest became filled with blood, or other fluid, ten years ago, and has never yet been absorbed. The heart is drawn over into the other side. The pain of which he complains in the left side is connected with the filled pleura, in some way which is not easily to be accounted for. Great attention to the bowels;—and the side should be rubbed with an opiate stimulating liniment; no violent medicines should be employed."

Upon further examination, the middle part of the left side of the chest is fuller than the other; there is a gradual and uniform distention of the thoracic parieties on this side, but no sense of fluctuation. My patient's dyspnœa increased along with his pains, and he became so ill that he experienced great difficulty in moving out of the half recumbent position on the back and the left side. On Sunday, the 17th of January last, he suddenly, and without any unusual exertion, began to expectorate a large quantity of a dark brown-coloured fluid, not unlike thin treacle; it gradually diminished during the day, and the following day was absent. On the third day the expectoration recommenced, and has continued up to the present time. For more than three weeks the quantity expectorated was not less than a pint per diem; it is now about half that quantity. At first it

was mixed with very little mucus, and this not particularly unhealthy; now it is copious and glutinous; coughing is a pretty constant symptom, and not less than three gallons of this brown-coloured fluid, with mucus, have been expectorated since the 17th of January.

The relief has been considerable since this change occurred—the dyspnœa, the pains, and the frequency of coughing, have abated; he has been able to obtain more sleep, and some while lying upon the right side, but finding that his cough is less troublesome when upon his back or the left side, these positions are preferred. He is now able to sit up in a chair for two or three hours; his appetite is tolerably good, and his feelings are those of being stronger and much relieved of pain. Hectic fever is developed, with swelled ankles, and I am doubtful if nature will ever be able to repair the injury which the thoracic contents have received. Percussion yields no sound on the left side of the chest, except just beneath the clavicle. On the right side the sound is good as low as the fifth or sixth rib. I believe that the left lung is almost totally impermeable to air, and the right lung only partially so. The heart's action is now to be heard in its natural situation, or nearly so, but more distinctly, as before, on the right side, beneath the nipple; indeed it is here to be *felt*, violent and strong. The contractions are regularly effected, and the pulse at the wrist is feeble and frequent—100 beats in a minute. The fluid expectorated is now brighter of colour, and is more disposed to unite with the mucus.

A physician of great talent and ability in the knowledge of animal chemistry, has given me his opinion, from experiments performed by himself, that the brown fluid is serous—he would call it an *effused* fluid; the mucus on the surface is obvious.

It may appear strange that I should attach any importance to the nature of this fluid. I do so only so far as it is capable of assisting me in determining whether my patient is spitting up that which has been accumulating for years, or whether there is at this time a morbid secreting surface giving issue to that which is now being expectorated.

It was a rational conjecture that blood and other fluids might have been extravasated as a consequence of the injury;

—then comes the question, could such extravasated fluids become so changed as to assume the appearance of that under consideration? At first I thought it probable; but, from the course which the complaint has taken, I am now disposed to think otherwise. I believe it is daily secreted from the surface of a cyst, and is daily discharged through the lung.

This rather remarkable case may prove in some degree useful, by shewing how wonderfully nature can accommodate herself to the pressure of disease, even in such vital organs as the heart and lungs; and what power she possesses to effect the removal of a load which has oppressed her for nearly twelve years. The termination of this case (though at present uncertain) will, I trust, from the improvement of health which has occurred, be favourable.

Feb. 20, 1830.

March 6th.—Has had severe diarrhœa for several days; his legs, and even his thighs, are much swollen, yet he has gained some strength; is able to walk, with the assistance of one person, from his bed-room to the sitting-room adjoining; had a paroxysm of fainting, which lasted for two hours (during which time no pulsation about the heart could be discovered); took brandy and water, and coffee. I did not see him during this seizure.

8th.—Another attack, but less severe and alarming, preceded by violent pulsation in the chest. The pulse is 110 in a minute at both wrists; in the left, which it has happened that I have generally felt, it is as before, *feeble*, but in the right it is full and strong. The difference in strength is strikingly great. The pulsations in the carotid arteries are strong and equal. The fluid now expectorated is less in quantity than the tenacious mucus; it is also very thin.

14th.—Has been seen by Dr. Ryan and Mr. Costello. Pectoriloquism is discoverable in the left lung; the pulse is at 114, full and strong at one wrist, and feeble at the other; the expectorated matter is composed of serum, mucus, and a little healthy pus; there is but little of the light-brown fluid mixed with them. By sleeping a little more to the recumbent position, the cough is less troublesome, and less is spit up. The appetite is good, and there is no pain.

About this time Dr. Gregory and Dr. Uwins separately visited the patient.

21st.—The sputa have a peculiar sour sickening smell, and shew a few streaks of blood. Hectic fever has been absent the last week; swelling of the legs reduced; tongue appears red and sore at its sides; bowels have discharged several very bilious motions; the pulsations of right carotid somewhat stronger than those of the left; the right subclavian beats decidedly stronger than the left; pulse the same—120 beats in a minute.

23d.—Visited by Dr. Whiting. Cannot now discover any pectoriloquism, which had been heard distinctly before at the inferior angle of the left scapula; there is present a distinct pulsation in this part; no respiratory murmur, and no fluctuation to be ascertained. The sputa, watery and mucous, retains the same mawkish smell—amounts to about 6 oz. per diem; tested with litmus paper produces no change in colour, and the addition of lime-water gives no evidence of the presence of an uncombined acid. Examined the form of the chest. The shoulders in their natural situation, or nearly so; a slight lateral curvature of the upper dorsal vertebræ; measuring the circumference of the chest on both sides, scarcely any perceptible difference, though to the eye the right side appeared larger than the left—it certainly had a rotundity which the other had not, and the integuments were thickened. The patient positively asserts that the affected side has been much larger than it is at present. Other symptoms nearly the same.

April 10th.—The condition of the tongue is improved; appetite good; bodily strength increased; voice stronger. The sputa resemble yeast after it has ceased to give off its carbonic acid gas, mixed with some mucus and a thin watery fluid—quantity about 4 ozs. a day—very offensive. The heart and circulating system in the same state; a blush of redness has appeared over the tumefied integuments, perhaps from pressure, as the patient has been able to lie down only on the left side.

16th.—Emaciation is increasing, though the appetite is good. The nights are good; occasionally a morning perspiration; the legs very much swelled; the cough is more frequent, but not painful; the expectorated matter much



the same, with the exception of having become more consistent, and a little more like muco-purulent secretion; œdema beneath the inflamed integuments; the pulses are more equable, though there is still a difference as before—beats 120 in a minute; the apex of the heart is still beating behind the right nipple, and there is heard *violent pulsation over every part of the left side of the chest*, accompanied with a peculiar blowing sound, which I do not understand, and cannot explain. I heard no respiratory murmur, except on the opposite side, and here it was not so natural as before. The cough was more troublesome, and pains about the chest were returned, with increased difficulty of breathing.

May 5th.—Symptoms have been gradually getting worse, and within the last ten or twelve days aphthous inflammation commenced in the tongue, lips, and cheeks, covering them with a yellow, thick eruption; appetite greatly diminished; dyspnœa and pains increased; unable to lie down or sit up for more than ten minutes at a time, and for the last three days of his existence was able to breathe only by sitting with his feet out of bed, and his head and arms resting upon a pillow placed upon the knees of an attendant. In a little effort made to change his position, he expired at 8 o'clock this evening. The cough a few days before death had not been so troublesome, and was unattended with any expectoration, and which had been gradually lessening in quantity, but retained its peculiar characters to the last.

I have said but little about the treatment of this patient's case; in fact, it is clear that nothing beyond a palliative one could be adopted. He was obliged to take large doses of laudanum, and now and then he required an aperient.

*Post-mortem appearances.*—The left side of the chest obviously larger than the right, the upper half forming a considerable unnatural convexity, the lower half somewhat contracted or drawn in. The intercostal muscles were pressed outwards, though not beyond the plane of the ribs: the extent of the intercostal spaces strikingly diminished, when compared with those of the opposite side. No elevation of the shoulder either before or after death, and no intumescence below the sternum.

The inflammation of the integuments gone, but the œdema remained. Finding there was fluid behind the intercostal muscles, I punctured them on the left side, and gave exit to three quarts or more of offensive opaque fluid, somewhat resembling whey. The sternum, with a portion of each rib, was removed in the usual way, in doing which a cyst of an abscess was cut through horizontally. The walls of this abscess were about two lines in thickness, and had a mottled, dark appearance, when incised: they seemed to be formed by the entire union of the two pleuræ, and completely filled the left thoracic cavity; internally there was a lining of a purulent deposit, particularly about the convexity of the ribs; the quantity of fluid matter taken out amounted to 13 pints. Not a vestige of the left lung was to be discovered. The left pulmonary vessels and bronchial tubes seemed to be lost in the walls of the abscess: they were cut through close to the mediastinum, and also near to the cysts; the former contained no blood; the lining membrane of the latter was inflamed and thickened, particularly so at that part of the left bronchus where its subdivisions commence. These tubes contained but little mucus. At the time of examination, the left pulmonary vessels and the bronchial ramifications were considered to have become obliterated at the cyst, and were not traced to their extreme terminations. They were surrounded by some condensed cellular substance. The bodies of some of the dorsal vertebræ were carious, and the same change had commenced in the ribs at their convexities. The heart was removed to the right side of the median line, and had embedded itself in the right lung: it was one-third smaller than natural; the left or pulmonary ventricle was not more than half the size of the aortic ventricle: the vessels arising from it and the valves were natural. The pericardium contained four or five ounces of a serous fluid, with a few shreds of lymph floating in it; it was not distended by this fluid; it being sufficiently capacious to hold two hearts of the size of the one found in it, it was not adherent to the walls of the abscess. The lungs on the right side did not collapse; they were filled with air, which air was easily pressed from one part to another with considerable crepitation; there was sanguinous con-

gestion at their root, and a few tubercles were dispersed through the superior lobe, otherwise this lung was healthy and natural in its appearance. The trachial and bronchial membranes were inflamed and thickened.

Present at this examination — Dr. Uwins (who introduced Messrs. Taunton and Jones), myself, and two pupils.

*Remarks.*—This case presents some few phenomena worthy of recollection, and which will be best understood by a comparison of the symptoms which occurred during life with the appearances upon dissection. It will be remembered that I did not see the patient till last summer, and that the previous history of the case was given me by the patient himself.

By the aid of auscultation much was clearly ascertained; but the whole extent of disease was not known till after death. Dr. J. Johnson's opinion proved pretty correct, and its truth was not questioned by the different medical men who saw the patient in succession. I must however say, that during the progress of the complaint, the symptoms varied, and that I was not singular in the opinion, that there was an enlargement of the heart, or an aneurism of some one of its vessels, in addition to other disease. I was more particularly impressed with this opinion at the time Dr. Whiting made his examination: there was then present a distinct pulsation in the left side of the chest, while the heart's action behind the right nipple continued as obvious as before. Succussion of the body gave no evidence of a fluctuation within the chest; there was no elevation of the right shoulder, or intumescence below the diaphragm; the ribs of the affected side were immovable, with a total absence of respiration in this part; and there was a copious expectoration of an offensive, dirty, yellow fluid. Under these circumstances, the operation of paracentesis thoracis, which had been hinted at by another medical friend, was considered not advisable. The real nature of the disease being now known, we can see that paracentesis might have been safely performed, and although not likely to have effected any thing material in the way of cure, after so long a continuance of the disease, the last days of existence would have been less painful to the patient, and

less distressing to his relatives. It would have removed by degrees that accumulation of fluid, the pressure of which gave rise to so much suffering, and ultimately produced so much disease. In the early stage of his complaint, I have reason to think it would have been very serviceable towards effecting a cure; and as Dr. T. Davis has introduced to the medical public a grooved needle, which may be safely passed between the ribs into the chest, for the purpose of ascertaining the nature of its contents, where fluid is supposed to exist, the use of this instrument would have been a proper preliminary step.

Our diagnosis, that an enlargement of the heart or an aneurism existed, is clearly proved to have been erroneous, and the distinct pulsation in the affected side must have been solely caused by the heart's impulse having been communicated to the accumulated fluid; but why not present a much longer time before death, or why never absent, I cannot explain further than by supposing the intervention of a compressed lung or other solid body. To the entire distention of the cyst, almost too large for the thoracic parietes, I attribute the absence of all evidence of fluctuation. Pressure upon the subclavian artery may be considered as the cause of the comparative weakness of the pulse in the left arm: to the same cause we may ascribe the superficial caries of the ribs and bodies of a few dorsal vertebræ, the displacement of the heart, and perhaps also the removal of the lung: it is a remarkable fact, that not a vestige of the left lung was discoverable. The occurrence of so large and sudden an expectoration of a brown-coloured fluid, and its continuance for a considerable time, gradually changing to a dirty yellow, and having a very sickening smell, is also very remarkable, particularly as I question if it came from the cyst, which was discovered after death; at least there are circumstances which militate against this explanation. In the first place, the nature and character of the matter expectorated being sero-mucous, of a peculiar colour, &c. and even to the last it can scarcely be said to have contained any admixture of pus. Secondly, the establishment of a *pretty free* communication between the left bronchus and the cyst for several weeks, one should think would not be very

likely to become closed, when the contents of the latter were subject to much probable disturbance from coughing, position, &c. The matter found in the chest was sero-purulent. I here regret that at the post-mortem examination the left pulmonary vessels and bronchial tubes, which were divided close to the mediastinum and the cyst, were not traced *in situ* to their terminations; but these seemed clearly to be at or in the walls of the abscess or collection of fluid: had there been a portion of compressed lung only of the size of a filbert, it would not have escaped discovery, but nothing of the kind was seen. Could the brown-coloured discharge have been produced by the breaking down, compression, and removal of the pulmonary parenchyma?

The pathological views and explanations of the morbid anatomy, which I, in common with the other medical gentlemen who assisted at the examination of the body, had formed of this case, were opposed by Dr. Whiting, at a meeting of the London Medical Society. We were of opinion that the disease was an abscess of the lung, and that the cyst was formed by the entire union of the pleura pulmonalis with the pleura costalis of the affected side. The absence of all lung, and the bluish, mottled appearance of the incised cyst, seemed to favour this opinion. Dr. Whiting spoke of the very great rareness of such an abscess, and stated it as his opinion that it was originally a case of empyema from pleuritic inflammation, and that all the post-mortem appearances might be considered as consequences of that disease. I did then express some doubt of the truth of our explanation, and subsequent reflection and inquiry have rather increased than diminished that impression. I am very much disposed to believe that Dr. Whiting's doctrine is the more correct\*.

Some of the phenomena in this case I am not able satisfactorily to explain; others are extraordinary and instructive, and upon the whole I have thought them worthy of publication.

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\* The diminished size of the right side of the heart I suppose to have been caused by the irritable condition of the left lung.

## HOSPITAL OF ST. LOUIS.

### *Clinique de M. Biett.*

A COURSE of clinical lectures on the diseases of the skin, to which this hospital is exclusively devoted, is generally delivered there every summer. M. Biett has lately begun this course, and we propose following each lecture; and whenever we find any new or important modification in the treatment of these affections, to present it in detail to our readers. From the plan on which the French hospitals are conducted, each having its peculiar class or classes of disease, they afford more ample opportunities of studying the history, character, and treatment of any particular affection, and of making such observations as may lead to an improved treatment, than could possibly be found in any general hospital where there were only a few of the diseases observable in the course of a twelvemonth. This kind of review or glance at the clinique of M. Biett will, therefore, in some measure enable our readers to determine how far the French surgeons profit by the advantage which such extensive opportunities for observation must confer.

M. Biett, in his introductory lecture, observed that his chief object was to endeavour to throw some light on the difficult and but slightly-advanced study of the pathology of the skin; that though this branch of science was not far advanced, we were much more fortunately placed for the study of it, than in appreciating the diseases of the viscera; for there every thing was concealed, and we could only draw correct conclusions by analogy and the aid of close reasoning. Here, from the beginning and through the whole course of the disease, every change was visible to the eye. At the same time the study of these diseases became much more interesting when we were enabled to trace a chain of connexion or sympathy between the various affections of the skin in their different stages, and the functions of the viscera. Here our physiological knowledge was called into play, and we were often enabled to contribute in turn to the physiology of the human frame by observations made in disease, and which could not be traced in health: this was illustrated by several examples. In the course of these lectures, he continued, he would have to direct the attention of



his pupils to the almost miraculous effect of some remedies in affections of the skin, while in other cases he would be obliged to confess that all our known remedies entirely failed.

M. Biett then proceeded to remark how important to the true history of syphilis were our observations on the diseases of the skin, and to this subject he purposed devoting a considerable share of his attention, that he might give the results of his long experience, and also lay before his hearers the experiments with respect to the therapeutic agents, which had for many years been carried on in this establishment\*.

The three next lectures were taken up with a review of the patients occupying these wards, giving a short history of each, and alluding slightly to the general treatment; but as in the history of each disease they will be more particularly alluded to, it is unnecessary to stop here to give our readers the imperfect outline. The cases under treatment were pointed out as instances of psoriasis, elephantiasis, syphilitic tubercles thirty years after the primary affection, lupus, prurigo, pityriasis in its various forms, &c.

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M. BIETT'S CLINICAL LECTURES ON  
DISEASES OF THE SKIN.

*Eczema Rubrum—Lepra Vulgaris—  
Syphilitic Papulæ—Pityriasis Vesic-  
olor, with Syphilis—Pompholix-benig-  
nus—diutinus—solitarius.*

M. BIETT, in this lecture, alluded slightly to one case of *eczema rubrum* produced by cold, and confined to the neck and back of the head, instead of being spread, as usual, over the surface of the body. This was followed by some observations on *lepra vulgaris*, which he has treated with considerable success by the liquor arsenicalis.

A patient afflicted with an eruption which M. Biett terms *syphilide papulense*, in some degree resembling the *lichen lividus* of Willan, gave rise to some observations. The latter form of

disease, though in some circumstances it does not present venereal characters, yet is very generally unequivocally syphilitic. In this case, he observed, the eruption was evidently formed of syphilitic papulæ. The primary symptoms of disease in this patient were ulcerations on the glans penis eight or ten days after connexion, having all the characters of Hunter's chancre. He submitted to some empirical treatment, having placed himself under the care of a quack, who gave him some drops, with some topical application. The chancres healed, and, a few days after, the patient was covered with a coppery papulous eruption, the same as might still be observed. He suffers, besides, from chronic inflammation of the testicles; they are heavy and hardened. M. Biett remarked, that he had seen many analogous cases yield promptly to mercurial treatment judiciously modified. He purposed resorting to this after trying for some time enollent applications and bleeding; observing, that if he had had merely the papular eruption to treat, he would have employed fumigations of the red sulphuret of mercury, which has generally proved extremely successful—the eruption disappearing in less than three weeks, or in a month at most.

*Pityriasis vesicolor*, complicated with constitutional syphilis. In the patient thus afflicted, M. Biett remarked that several sets of symptoms were observable: first, the *pityriasis vesicolor*, which began in 1828, by a slight and superficial eruption, and which yielded readily to sea-bathing, but soon returned in a more severe form. The patches are isolated and not confluent, and, by their form, almost resemble *psoriasis guttata*; but if the finger be passed over them, we find they are either not at all or very slightly elevated. They also have the peculiar fawn-colour characteristic of the species. The patient is also suffering from the constitutional effects of syphilis, shewn by exostoses on the superciliary ridge and tibia, and the cicatrices which have succeeded the *tuberculo-papulense* eruption, and which now (six years after the first attack) still presents the syphilitic character. They are white, depressed, &c. Complete destruction of the epidermis; the cuticle, whitish, rests immediately upon a layer of laminous tissue. In 1814 the patient had

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\* M. Biett has devoted two wards, St. Laurent and St. Prosper, exclusively to affections of the skin that have resisted all the usual remedial means, in order that they may be submitted to carefully regulated experiments of others not before employed in their treatment.

two primary buboes, for which he merely had soothing applications, and after a long period, the inflammation ended in resolution. In 1822 he had two chancres on the glans penis: some mercurial frictions were employed, but were discontinued in a few days, on account of a journey to Holland. Two years after, an eruption of the kind described came on the forehead, and spread rapidly, unaffected by the calomel that was administered. The patient remained with scarcely any improvement. On his return to Paris he was cured by the *Liquor Hydrargyri Oxy-muriatis*. However, some years after, exostoses appeared on the superciliary ridges and the spine of the tibia. Were these the result of the mercury? M. Biett expressed his intention of returning to this question when he should be treating the subject of syphilis more especially; in the meantime, he said, it was worthy of remark, that exostosis often took place in venereal patients who had not been treated with mercury, and that we never find persons thus affected who by their occupations are constantly exposed to the action of mercury, but without ever having suffered from any venereal affection. In this case the appearance of the *ptyriasis* gives rise to a question of some importance. When certain eruptions supervene in syphilitic patients, and especially when they are of the genus *ptyriasis*, some pathologists consider them as certainly venereal: others, again, believe, that a simple and accidental eruption may appear in these patients in the same manner as though they were free from other disease. The latter is M. Biett's opinion; he thinks certain forms of syphilis may succeed each other, but also an eruption of an entirely different nature may supervene, and complicate a venereal affection, and it appears that the case just described is such an instance. Similar coincidences are by no means rare, and to cite one of the most frequent, we often see the itch in syphilitic patients, and sometimes complicated at the same moment with some other eruption. With respect to the opinion of some physicians who constantly regard *ptyriasis*, whether it be observed alone or attended with other symptoms, as the result of a venereal affection, and who treat it by mercurial preparations, they are still more grievously in error. M. Biett observed,

that not only did we observe it in patients where there was nothing to authorise the suspicion of syphilitic taint, but also in young girls before any sexual intercourse had taken place. M. Biett purposed administering to this patient the decoction of *Zittman*, which generally is employed with success, especially when the bones are affected.

*Pompholix*.—No. 12 is a patient affected by a form of disease that is not common—the *pompholix*. The eruption in this case is an intermediate variety between the *pompholix benignus* and *pompholix diutinus*. He caught the itch last December, and resisted all remedial means for three months;—frictions, with the *pommade de citrine*, were then resorted to. A short time after this, *bullæ* appeared, first on the face, and then on the penis. The spots were not far separated from each other; they however disappeared with the use of some emollient applications. Again they returned on the thighs, and succeeded each other with great rapidity, becoming confluent. Two days before that on which this lecture was delivered, the *bullæ* were perfect, and the patient was a very curious example of this affection. M. Biett paused at this case, and gave the history of the different forms of this disease; but as his description did not essentially differ from that given by our own authors, we pass it over. He summed up by remarking, that the *pompholix* may succeed other diseases, especially *psora*: he had seen it follow closely on the disappearance of an *eczema* of the face, in a woman 30 years old; but the eruption spread over the whole body, and it might almost have been mistaken for a general burn: this became complicated by inflammation of the alimentary canal, and the patient died. All classes of society seem to be equally liable to this disease—the highest as well as the lowest.

The *bullo-squamous* form is often difficult to distinguish from chronic *eczema* when the *bullæ* have disappeared; and sometimes the most experienced eyes are unable to decide. The positive characters which ought to enable the practitioner to form a correct diagnosis in these difficult cases, are the violet tint and the presence of *bullæ*, which will always be observed in the course of a little time.

With respect to herpes, some doubt

may arise when the vesicles in grouping have acquired a greater dimension than ordinary; but they are rarely larger than a pea in this affection. In the pompholix, on the contrary, the bullæ acquire the size of a small nut, and even more.

The prognostic will vary according to the species: the *P. benignus*, as its name indicates, is a mild affection; the *P. diutinus* varies according to the form in which it appears. When the disease is strictly bullous or vesicular, it is much less severe than when it is confluent, occupying the whole of the integuments, or penetrating and affecting the mucous system; the fever is continued, the patients are unable to take any food, and a sickening and fœtid odour proceeds from them.

The indications of treatment are in general very vague: if, for example, the patient is young and vigorous, and the febrile state is well marked, bleeding is followed with benefit; if, on the contrary, the subject be advanced in age, or has for a long time been exposed to debilitating causes, the administration of tonics is successfully adopted; if, however, there are any symptoms of mucous irritation, we must carefully abstain from them. M. Bielt has seen several cases cured, when the alimentary canal has been free from disease, by the decoction of cinchona, with the addition of a little sulphuric acid. In the *bullo-squamæuse* form, tonics often increase the danger.

As to the local remedies which M. Bielt employs, they consist in emollient baths; and afterwards, when the disease is decreasing, its final cure may be accelerated by the use of the subcarbonate of soda. A mild diet, composed exclusively of light alimentary ingredients, is essential.

for amputation, it has been little practised in this country till within these few years. The credit in which this operation now stands is owing in a great measure to the activity and success with which this gentleman has practised it on all suitable occasions. During his exertions to bring it into general notice here, it appears that M. Roux has been similarly occupied at Paris; and, therefore, although his experience of its safety and advantages is far from being so extensive, and is not altogether so flattering as that of Mr. Syme, we conceive it important to make known the results obtained by a foreign surgeon of such celebrity.

M. Roux observes, that, notwithstanding the frequent success obtained in France by MM. Moreau, father and son, and by M. Champion, the operation continues to be held in great disrepute among his countrymen, and that he believes he may safely assert he is the only surgeon in Paris who has tried it often enough to be able to appreciate its difficulties, its inconveniences, and its advantages.

He considers that in all probability it will be right to abandon it entirely in respect to the joints of the lower extremities, and especially that of the knee; for excision here produces too much injury: there are too many accidents to dread. Once only has he performed excision of the knee, and that was against his own opinion, at the express desire of the patient, who expired in nineteen days. "Even when the operation is performed without the sacrifice of life, the preservation of such a limb will probably be more inconvenient in standing or walking than the timber leg used after amputation."

"But as for the arm—destined in man for so many noble and important purposes, and so useful even when it has sustained serious injury, or is more or less deformed, provided the hand be preserved entire—it is wrong not to attempt to derive all the profit possible from the excision of the diseased joints of such a member. At the elbow particularly it appears to present the greatest advantages; so that it is impossible to imagine why so many able surgeons prefer amputation. Undoubtedly excision of the elbow-joint, by which I understand the removal of the whole lower extremity of the humerus, as well as the upper end of both bones of the

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MR. SYME AND M. ROUX

ON

EXCISION OF DISEASED JOINTS.

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WE need not observe to our readers, most or all of whom must have perused the papers published on this subject in our journal by Mr. Syme, that, although the operation of excision of the joints of the extremities has been long known in surgery as a substitute



fore-arm, is, if not difficult, at least laborious in its execution: fifteen or twenty minutes are scarcely sufficient for its proper performance. It leaves a very extensive wound, which suppurates abundantly, notwithstanding the greatest care to approximate and unite the flaps, which must be formed to reach the bones; and to these objections it must be added that several months are required to complete the cure. But if the limb is preserved and restored in all its functions, and if life is not more, or rather is actually less endangered than by amputation, are these disadvantages not abundantly compensated? This compensation is satisfactorily established by the following facts, which, without being in themselves more curious or important than those for which the surgical art is indebted to MM. Moreau and Champion, are at least more recent, and, I may also hope, of a nature to carry conviction with them.

"I have performed the operation of excision of the elbow four times. The first was in 1819, the last a few months ago; one in the right arm, and three in the left. Three of the patients were males, one of whom was 37, the two others 21 and 22 years of age; and the fourth was a girl of nineteen. In all, the affection of the elbow was apparently of a scrofulous origin, and had attained a very advanced state of progress; for the joint was greatly swelled and surrounded by many fistulous openings, and the operation exposed an extensive fungous degeneration of the cellular tissue, as well as disease of the articular ends of the bones. I shall not describe the special disease in each case; neither shall I relate the method of operating, which was nearly the same in all, or the ulterior treatment required for accomplishing the healing of the wound and preservation of the movements of the arm. My sole object is to state the definitive results.

"Of the four patients one only died of the accidents immediately connected with the operation. The first dressings had been removed, and the wound several times dressed anew, and suppuration had commenced in the interior of the wound; nay, several of the sutures for preserving the flaps in apposition had been also withdrawn, when hæmorrhage took place from beneath the flaps. This returned repeatedly; so that at length it became necessary to think of amputa-

tion, to save the patient's life. Perhaps I hesitated about it too long: death ensued in three days. In the three other patients there was not a single serious circumstance to complicate either the immediate or remote consequences of the operation; life was not for a single moment in danger. The cure, indeed, was not accomplished so quickly as might have been desired; occasionally too I dreaded a too abundant suppuration; it was also necessary to take measures against the retention and accumulation of pus in particular spots; and although one of the three was quite well three months after the operation, on the other hand the two remaining patients did not recover entirely for eight or nine months. But ultimately the arm was preserved in every instance; and in every instance its movements were partially recovered. Unfortunately, the patient I first operated on in 1819, was attacked with phthisis only a few months after recovering the free use of the arm, and died of this disease, the seeds of which probably lurked in her constitution before the operation was performed. The two others, of whom one had the joint cut out two years, and the second three years ago, are at present alive and in perfect health, and follow their customary occupations at Paris. One is a grinder, and the other a mantua-maker."

We shall leave the reader to compare the preceding extract with the results obtained by Mr. Syme, as detailed in his papers in this Journal. xxvi. 49, xxxi. 261, xxxii. 235, xxxiii. 233. It appears that of seven cases of excision of the elbow he has not lost one; that all have regained, or at the time of their dismissal were in the fair way of regaining, considerable freedom of motion in the arm; that of two cases of excision of the knee, one was recovering the use of the limb, while the other died of amputation, which was rendered necessary by the disease of the thigh-bone having been more extensive than was anticipated; and that in one instance the head of the humerus was cut away with the effect of forming a joint which promised to be useful.

Through the kindness of Mr. Syme, we have lately had an opportunity of examining three of these cases. One was the case of excision of the head of the humerus, related in our 26th volume. This woman we found actively

employed in washing clothes, which fact might be alone sufficient to satisfy every one that the shoulder-joint is of great use to her. The humerus is, in fact, moveable in every direction, and to nearly as great an extent as the natural joint. She has also the power of moving it freely and powerfully in every direction, except directly outwards from the body; and the joint is so strong, that she can raise a pitcher of water in the hand of that side; but this is rather a greater exertion than she feels it safe to make habitually. The elbow-joint, and the joints of the hand and fingers, are as entire as ever. The shortening and deformity of the arm are very apparent when the shoulder is naked; but when it is covered, the arm might, on a cursory examination, be very readily mistaken for a sound one.

The second case was one of the instances of excision of the elbow-joint. The operation was performed a twelve-month ago. There is considerable freedom of movement, and the patient retains completely the voluntary power of bending the fore-arm; but has the power of extending it only in a slight degree. He can raise a heavy body with ease, can strike a straight-forward blow with considerable force, and preserves entire all the movements of the wrist and fingers. There is very little shortening of the arm.

The third case was the instance of excision of the knee-joint, mentioned in the 103d number of this Journal. There is still a small sore, with a trivial discharge under the new joint. This joint is in a state of slight permanent flexion, and admits of but trifling motion in any direction; but the motions of the ankle and toes are entire. On the whole, this case does not hold out much encouragement to practise the operation of excision of the knee joint, and Mr. Syme is inclined to form the same conclusion with M. Roux—that a timber-leg will probably be more useful than any leg which can be formed after the excision of the joint\*.

## MEDICAL GAZETTE.

Saturday, July 24, 1830.

“*Licet omnibus, licet etiam mihi, dignitatem Artis Medicæ tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso.*”—CICERO.

### WHY ARE THERE NO M.P.'S OF THE MEDICAL PROFESSION?

THE public mind has begun to be awakened to this question. We find it repeated and re-echoed of late, in all manner of ways, in the prints and periodicals. It was ably put in the Quarterly Review, some six months ago, in Dr. Gooch's paper on the Anatomy Bill. We had ourselves the pleasure of calling the attention of our readers to it, about the same period; and from time to time it has been discussed, in one shape or other, in our pages. Yet it is remarkable how slowly some of the most important inquiries secure any degree of permanent notice. A sort of indistinct impression seems to have prevailed among the people, that physicians, as well as ecclesiastics, were excluded from seats in the House of Commons, and thus that the legal alone, of the three learned professions, was suited to the discharge of senatorial duties. Recent circumstances, however, have raised a natural curiosity to consider the subject more closely; and it has ended in a pretty general complaint that no medical men have come forward to assist personally in the great council of the nation, and to afford immediate information on topics connected with their profession; in a word, that, in consequence of this, questions of vital interest, touching the domain of medical jurisprudence, medical police, and the like, are altogether neglected, or inadequately treated in the House, to the great injury of the community at large.

\* Edinb. Med. and Surg. Journal—and Revue Médicale, Janvier 1830.

There have been few instances of medical members of parliament. Why this has been the case, it is not difficult to explain. The duties and attendances of an M.P. would be highly inconvenient for a physician of any eminence in active practice—one course of life could not possibly be followed but at the expense of the other. If a physician have any chance of repose after a fatiguing occupation of twelve hours out of the twenty-four—such as many of them are known to endure—those are not the moments he would bestow on the service of his country, though they are probably the very moments in which his parliamentary duties would require his most active exertion. And again: a physician, constituted as society now is, does not attain that eminence which could give him weight in parliament—that busy and profitable practice—till his declining years and his exclusive devotion to his profession have stripped him of all ambition to figure as a legislator. If he give up his profession, besides, he has nothing compensatory to expect. Now a lawyer, on the other hand, has his hours of business better defined; he is subject to no sudden and precarious engagements; and should he resign his practice at the bar, has a chance of numerous good things which lie open to him in lieu of the emoluments which he foregoes.

But there have been *some* medical men in parliament—men, too, who acquitted themselves while there in a manner of which their profession has every reason to be proud. Radcliffe, it is true, was an old man when he arrived at that honour, yet was he no mute, inglorious member of the House; on more than one occasion did he animate it by the vigour and force of his eloquence. Some years after, Freind, the accomplished historian of medicine, distinguished himself by his parliamentary

ability: his talents as an orator, and his love of constitutional liberty, were conspicuous during the whole period of his career; unfortunately but too much so, by reason of the heavy forfeit which he paid for his intrepidity. The list is but scanty, no doubt, but not the less to be respected on that account. We shall take leave to add to it only one other name, and that one with which our readers are probably not very familiar. In the Irish parliament, in its best days, Dr. Charles Lucas was preeminent for his eloquence and his patriotism. His uncommon powers of illustration, political and professional, and his ardent attachment to the best interests of his country, rendered him by far the most distinguished parliamentary leader of the time. As member for Dublin, we find him in the debates of 1763, at that period (in a volume now lying before us), night after night discussing questions of deep political import—parliamentary reform—the rights of individuals and public bodies—and various other topics for which his professional education had peculiarly adapted him; not to omit those subjects which concerned the health and safety of the people\*. The memory of Lucas has ever been dear to his fellow-countrymen, for his public and private virtues.

Were it at all necessary to shew that medical pursuits are not inconsistent with political sagacity and tact, we

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\* We shall extract a short passage from a part of the volume which has accidentally presented itself to our notice: it will probably be not wholly uninteresting at the present moment. "The committee appointed to consider the petition of the minister and churchwardens of St. Andrew's, reported that it was necessary to enlarge the burial ground of that parish. This resolution of the committee was strongly opposed by Dr. Lucas, who demonstrated that the effluvia of corrupting bodies thrown together in great numbers, but just below the surface of the earth, in populous cities, could not but produce very pernicious consequences. He observed that the practice of thus burying the dead was contrary to that of all antiquity and of most of the great cities of Europe, to none of which it could be more pernicious than to Dublin, as the streets were very closely built. The resolution was, upon motion, recommitted." —*Debates*, Nov. 15, 1763.



should mention the name of Locke, a practising physician, the author of the *Essays on Government*, and the intimate friend of Shaftesbury ; but as his is an extraordinary case, it may perhaps be the less proper to adduce it.

There are no physicians in parliament at present. Let us see how it does without them. Of what materials is the house composed ? Of lawyers and country gentlemen ; the former of whom engross the whole management of public affairs—the making and breaking, as well as the explaining and applying the laws of the land, belong altogether to the legal profession. With what success those honourable and learned members manage the duties devolved upon them—with what simplicity and plain good sense they legislate—with what freedom from mystifying technicality—we leave others to describe ; but we believe it cannot be gainsaid that there are numerous defects in the mental qualifications of lawyers, resulting from their professional study and habits. They are much more limited in their range of contemplation than physicians—even allowing them an equally useful education ; they are more impeded by all that Lord Bacon calls the *idola tribus* ; and though they may probably flatter themselves that the House is no longer a *parliamentum indoctum*, such as they were once pleased to call it when lawyers were expressly shut out, yet the manner in which many questions relating to the medical profession are discussed from time to time, may, we should think, very properly give it some small claim to that title.

If physicians be scrutinized as to their qualifications for seats in parliament, they will appear to great advantage ; indeed they will be found singularly well qualified. Of course we speak not of all who usurp the name ; but the regularly-educated physician we affirm to be well suited by his education to entertain

almost every political measure, perhaps those which consist of legal technicalities alone excepted ; while the rank he holds in society, and the independence conferred by his wealth (for British physicians, it is well known, rank higher and are better remunerated than in any other nation of Europe,) are calculated to give a weight and influence to his opinions that are not usually conceded to those of the members who at present compose the House of Commons. A large proportion of business, too, occurs in the course of the session which belongs almost exclusively to the province of the physician—the salubrity of colonies—questions of contagion and quarantine—the interests of charitable sick institutions—the supply of wholesome food and water throughout the kingdom—population and increase—the condition of the poor ;—who on most of these vital topics, usually referred to committees, could afford so much useful information as medical men ?

We dwell not much upon, though it should undoubtedly not be disregarded, the strange impropriety of leaving so large and so influential a class of the community unrepresented. While lawyers abound both in the upper and lower house, and the Clerical profession have their rights and privileges so amply protected by the heads of the church in the House of Lords, it hardly seems quite fair that the Medical profession should be without caste in the state. One would be almost inclined to suppose them as unprivileged as the Jews ; they are certainly quite as unrepresented.

The time is now at hand when some attempt should be made to rectify the present state of things. There are seats in abundance in the House at the disposal of the leading powers ; men of talent and information are much wanted ; lawyers have been found grievously

deficient in the conduct of questions out of their own immediate province, as we have had but too many proofs in some recent instances. And above all, it should be recollected, that next session topics of peculiar interest, and of peculiar difficulty to non-medical members, will come before the consideration of parliament—the much-agitated and ill-managed Anatomy Bill for example, and the affair of National Cemeteries outside the metropolis, &c. to the discussion of which, we repeat, the House of Commons in its present form, is incompetent. The body politic, it were not difficult to shew, can no more do without medical assistance than the body natural; and were there some able physicians in immediate attendance on the state, we should in sober earnest have more health in the councils of the nation; in fine, those extravagant demonstrations of deficiency in the simplest truths of medicine, which so frequently disfigure the effusions of some of the ablest members of the House, would be speedily and satisfactorily disposed of. It is not many nights since an eminent orator indulged himself in an unwarrantable attack on his late Majesty's medical attendants; yet though the groundless assumptions on which his reasoning was based, were glaringly evident to any one never so slightly acquainted with the principles of the medical art, there was nobody present to expose and demolish the ill-timed and ill-judged expressions of the honourable and learned member.

It is not to be overlooked, however, that no eminent physician, such as we have described, can accept of a seat in parliament without a great sacrifice of emolument; nor should we seriously advise any to such an indulgence of barren ambition who is not thoroughly persuaded of the good he should be enabled to effect in his new situation, and firmly resolved to effect it at all hazards

with the most liberal and disinterested motives. It may be—it ought to be—that such a sacrifice shall be duly understood and appreciated. At all events, the manifest disinterestedness of the medical man of eminence who enters the House of Commons with a view to discharge a duty he owes his country, cannot fail to raise him high in the public estimation.

#### LIBEL ON SIR M. TIERNEY.

WE are glad to find that our appeal to Sir M. Tierney on the subject of the libellous assertion of the *Lancet*, that he had signed the bulletins without seeing his Majesty, has not been made in vain, and that an editorial notice denying the charge has been inserted in the *Times*. This is the least certainly that any paper can do, after laying itself open to a prosecution by copying into its columns such an accusation, invented to serve the malicious purpose of the writer—that of slandering respectable men, and gratifying personal spleen.

“During the progress of his late Majesty's illness, it was stated in a weekly publication, and the paragraph was copied into the *Times*, that Sir Matthew Tierney had, during several days, put his name to the bulletins without having been seen or consulted by his Majesty. *Since his Majesty's decease, we have received personal explanations of the facts, and we have now no hesitation in giving the most unqualified contradiction to such injurious statements.*”—*Times*, July 21st.

Since the commencement of this Journal, no event has placed it so conspicuously before the public; and fortunately this has been done in such a manner as to force a comparison with the *Lancet*. The result has been as disastrous to our opponent as advantageous to ourselves—the falsehood and malice of the *Lancet* have been fairly met, and triumphantly refuted ere they were disseminated—our ob-

servations have almost in every instance annihilated the calumnies of the general libeller by anticipation. There may be some who still believe what the *Lancet* says, and such innocent souls we leave in their credulity. For the present we shall contradict its lies no more: to those above the scale of idiocy it must be unnecessary; and as to others, demonstration cannot reach them—nor are they worth the trouble of undeceiving, if it did.

#### NATIONAL CEMETERY.

In speaking of the new cemetery, the cry, among its advocates, is still for *Père la Chase*; but we can assure our plain English readers, who are still unsophisticated by the exaggerated reports of Frenchmen and unfledged visitors of the neighbouring country, that that Parisian burial-place, with all its pretty trickery and trumpery, and inflated sentimentality, is as incongruous to the taste and natural feeling of a true Englishman as the “kickshaws” of that nation are to his palate. Which of us would choose to have such epitaphs written upon himself or his friends as are to be found there? Who would have the abode of the dead converted into a pleasure-garden—the scene of gallantries and profane amusements? All this, forsooth, is the “sweet and touching sensibility” which characterizes the French people. For our own part, we will honestly say that a worse model could not be thought of to win our approbation than *Père la Chase*. Never can we forget the disgust we experienced when, on visiting the place, rather prejudiced in its favour than otherwise—after going the rounds of garden-walks, bestrewn with mawkish yellow garlands, cradles, candlesticks, and papered hoops, mixed up with fantastic marble tombs, of all sizes, shapes, and denominations, we longed to rest

our eyes upon the neglected spot which generally falls to the share of the humblest members of the community; and, after the pompous and ridiculous fustian of the inscriptions we had just been surfeited with, to read

“The short and simple annals of the poor.”

We reached, with some difficulty, the place of the common graves—the *fosses communes*, the “common trenches,” as they are appropriately called; when, horror indescribable, there they were, piled and packed together five or six deep, without a layer of clay between them, in shapeless vile shells, at the end of a great oblong pit, which yawned to be filled and filled with coffins and their contents only! This was enough of *Père la Chase* for us that day; and we only wish that our *sensible* countrymen, (we are speaking English), when they happen to visit that “celebrated cemetery,” will take the trouble of a *detour* to the foot of the hill, on the right hand side, as they descend from the chapel, and then inform us whether they would subscribe for the establishment of a similar cemetery in their own *unsentimental* country.

#### MEDICAL ESTABLISHMENT OF THE COURT.

WE understand that the following appointments have been made:—

*Physicians in Ordinary to his Majesty.*

Sir Gilbert Blane, Bart.

Sir H. Halford, Bart.

Sir M. Tierney, Bart.

*Physicians Extraordinary.*

Sir James Macgrigor—Dr. Maton—

Dr. Warren—Dr. Macmichael.

*Physician to the Household.*

Dr. Francis Hawkins.

*Sergeant Surgeons.*

Sir E. Home, Bart.—Sir A. Cooper, Bart.

*Surgeons Extraordinary.*

R. Keate, Esq.—B. C. Brodie, Esq.—

H. Earle, Esq.



*Physicians in Ordinary to the Queen.*

Sir H. Hallford, Bart.

Dr. C. M. Clarke.

*Physicians Extraordinary.*

Dr. Turner—Dr. Southey.—Dr. Locock.

*Surgeon to the Queen and to her Majesty's Household.*

Robert Keate, Esq.

The above are all those that we have ascertained with tolerable certainty, but there are several other appointments which still remain to be made. The Apothecary's department is not, we believe, definitively settled. Mr. Davis, of Hampton, is appointed Domestic Medical Attendant to His Majesty. The office of Surgeon to the Person, which was created by his late Majesty for an especial purpose, is to be discontinued, as not constituting a regular part of the Royal establishment.

His Royal Highness the Duke of Sussex has appointed Dr. Seymour, physician of St. George's Hospital, to be one of his physicians in ordinary.

ANECDOTES OF DR. RADCLIFFE.

HER royal highness, being indisposed, caused him to be sent for; in answer to which he promised to come to St. James's soon after; as he did not, however, make his appearance, a messenger was again dispatched after him, to inform him that the princess was extremely ill, and to describe the nature of her indisposition. When Radcliffe heard the symptoms detailed, he swore by his Maker, "That her highness's distemper was nothing but the vapours, and that she was in as good a state of health as any woman breathing, could she but believe it." No skill or reputation could excuse this rudeness and levity: he was, in consequence, dismissed from his attendance on the princess, and Dr. Gibbons succeeded him in the care of her health.

At the close of this year, the king, on his return from Holland, where he had

not very strictly followed the prudent advice given by Radcliffe, being much out of order, sent for him again to the palace at Kensington. In reply to some questions put by the physician, the king, shewing his swollen ankles, which formed a striking contrast with the rest of his emaciated body, exclaimed, "Doctor, what think you of these?" "Why truly, said he, "I would not have your majesty's two legs for your three kingdoms."

With this ill-timed jest, though it passed unnoticed at the moment, the professional attendance of Radcliffe at court terminated, nor would the king ever suffer him to come again into his presence, notwithstanding the Earl of Albemarle, who was then the chief favourite, used all his interest to reinstate him in favour.

During the stay of Prince Eugene in England, which took place in this year, he condescended to accept an invitation to dine with Radcliffe, who is said to have treated his princely guest after the fashion of true old English hospitality: instead of the ragouts and other French dishes with which the nobility had entertained him, the doctor ordered his own table to be covered with barons of beef, legs of mutton and pork, and other substantial British viands, and directed some strong beer, seven years old, to be served round to the company, in addition to foreign wines. The prince was so pleased with this national repast, that on taking his leave, he addressed Radcliffe in French to the following effect:—"Doctor, I have been fed at other tables like a courtier, but received at yours as a soldier, for which I am highly indebted to you, since I must tell you that I am more ambitious of being called by the latter appellation than the former. Nor can I wonder at the bravery of the British nation, that has such food and liquors of their own growth as what you have this day given us a proof of."

Richardson relates of him that he once said to Dr. Mead, "I love you, and now I will tell you a sure secret to make your fortune; use all mankind ill,"—and it certainly was his own practice. Radcliffe himself owned that he was avaricious, even to sparing (when-

ever he could contrive to do it), at a tavern-reckoning, a sixpence or shilling among the rest of the company, under pretence of hating (as he ever did) to change a guinea, because (said he) *it slips away so fast*. He would never be brought to pay bills without much following and importunity; nor even then, if there appeared any chance of wearying out his creditors. A pavier, after long and fruitless attempts, caught him just getting out of his chariot at his own door, in Bloomsbury Square, and set upon him. "Why, you rascal," said the doctor, "do you pretend to be paid for such a piece of work? why, you have spoiled my pavement, and then covered it over with earth to hide your bad work."—"Doctor," said the pavier, "mine is not the only bad work that the earth hides."—"You dog, you," said Radcliffe, "are you a wit? you must be poor—come in;" and paid him.

If this fondness for money be truly imputed to him, it must, at the same time, be admitted by all, that

—though he were unsatisfied in getting  
(Which was a sin) yet in bestowing—  
He was most princely.

#### HARVEY.

He was a great martyr to the gout, and his method of treating himself was as follows:—He would sit with his legs bare, even if it were frosty weather, on the leads of Cockaine House, where he lived for some time with his brother Eliab; or put them into a pail of water, till he was almost dead with cold, and then he would betake himself to his stove, and so it was done. He was troubled with insomnolency, and would then get up and walk about his chamber in his shirt, till he was pretty cool, or even till he began to shiver, when he would return to bed and fall into a sleep.

#### SYDENHAM.

"In the morning when I rise, I drink a dish or two of tea, and then ride in my coach till noon\*; when I return home, I moderately refresh myself with any sort of meat, of easy digestion, that I like (for moderation is necessary above all things); I drink

somewhat more than a quarter of a pint of Canary wine, immediately after dinner, every day, to promote the digestion of the food in my stomach, and to drive the gout from my bowels. When I have dined I betake myself to my coach again; and, when business will permit, I ride into the country, two or three miles, for good air. A draught of small beer is to me instead of a supper, and I take another draught when I am in bed, and about to compose myself to sleep\*."

## HOSPITAL REPORTS.

### SUSSEX COUNTY HOSPITAL.

*To the Editor of the London Medical Gazette.*

SIR,

IF the following case meet your approval, you will oblige me by allowing it a column in your valuable journal.

Your obedient servant,  
G. GWINNE.

Sussex County Hospital,  
July 7, 1830.

#### *Injury of the Head.*

John Nibbs, aged 25, coachman, admitted under Mr. Blaker, June 20th, at 8 P.M. in a state of insensibility, having about an hour previous to admission fallen from his seat in a state of intoxication, and pitched on the posterior part of the head. His breathing was hurried; pulse scarcely to be felt; extremities cold; pupils dilated. There was no appearance of any external injury, with the exception of a slight abrasion over the left eye, and some oozing of blood of an arterial colour from the right ear. He was immediately put to bed, and some ammonia with camphor mixture given at 11 P.M. The pulse rose, and he lost sixteen ounces of blood. A cold lotion was ordered to be constantly applied to the head.

On the morning of the 21st the report was, that he had passed a very restless night, and was very sick. The pulse was 100, and jerking; still insensible; pupils remain dilated; bowels bound; febrile symptoms set in; stomach still irritable; mouth and tongue dry, the latter covered with a brown crust. V.S. was repeated to  $\frac{3}{4}$ xvj.; calomel, and sulphate of magnesia, with mint water, were ordered every four hours.

\* At the present time, no physician thinks of leaving his home before the hour that Sydenham was returning from his round of morning visits to his patients.

\* The Family Library—British Physicians.

22d.—Restless night; feverish symptoms increased; no alvine evacuation; pulse 96; carotids throbbing; constant thirst; countenance anxious; cerebral derangement; V.S. ad  $\bar{\text{J}}\text{xx}$ . His mixture to be repeated, with the addition of Tr. jalapæ.

23d.—Slept during the night; symptoms mitigated after the V.S. for a short time; still remains insensible; bowels freely open; evacuations the colour of pitch; mind wandering; pupils dilated; pulse softer; skin clammy; constantly putting his hand to his head.

Apply 20 leeches to his temples, and continue his medicines.

24th.—Slept at intervals during the night, at others delirious; feverish symptoms as well as arterial action increased; bowels sluggish; thirst; pupils still dilated; arteriotomy to  $\bar{\text{J}}\text{xij}$ .; blister to the nape of the neck.

Continue his calomel, and add a drop of croton oil to each dose till the bowels act.

25th.—Bowels well opened; the excretions still unnatural in colour, resembling pitch; restless night, constantly getting out of bed; pulse 103, full and hard; there is evidently some congestion about the brain; pupils still dilated.

V.S. ad  $\bar{\text{J}}\text{xvj}$ . Repet. alia.

26th.—Blood taken yesterday inflamed; returns no answer when questioned; still continues in a comatose condition.

Repeat the bleeding to the extent of  $\bar{\text{J}}\text{xvj}$ . and continue his mixture with the addition of  $\bar{\text{J}}\text{j}$ . of Tr. digitalis, and his calomel.

On the morning of the 27th much worse; out of bed repeatedly during the night; delirium; extremities cold; passes his urine and motions in bed; pulse 80, thready; skin hot; mouth not affected by the calomel.

Apply a blister to his head, and let the blistered surface be dressed with equal parts of savine and mercurial ointment, and repeat his other remedies.

28th.—Restless night; convulsions during the night; constant moaning; mucous membrane of the mouth covered with an aphthous appearance.

V.S. ad  $\bar{\text{J}}\text{xij}$ .—Add some æther to his mixture.—Continue his calomel.

29th.—No marked alteration for the better; had several convulsive fits during the night of short duration; still passes his urine and stools in bed; moans loudly; pulse thready.

30th.—To-day is in every respect better; mind more composed; is able to put his hand to that part of his head which is the most painful, when requested; during the

night about four ounces of watery fluid escaped from the right ear, from which he appears to have found considerable relief.

He continued improving till the 2d of July, when all bad symptoms returned; he became delirious; moaned loudly; convulsive fits; great restlessness; pulse 100, soft and intermittent; skin hot; countenance dejected.

Apply twenty leeches to his head, and continue the other medicines.

3d.—Had a better night; seems more composed.

4th.—His fits are constant, throwing himself in all attitudes; subsultus tendinum; evidently in articulo mortis; eyes convulsed; gradually sinking. Died on the night of the 4th.

*Inspection 43 hours after Death.*—The brain shewed evident marks of arterial and venous congestion: on removing the dura mater a patch of coagulable lymph was observed on the anterior part of the right hemisphere; the ventricles contained about three ounces of watery fluid, resembling that which came away during life; a fracture was observed commencing at the inferior part of the occiput, running into the foramen magnum, then ascending over the transverse ridge of the occipital bone, and terminating in the petrous portion of the temporal bone; suppuration had taken place in various parts of the brain.

*Observations.*—The symptoms of concussion, as well as those of compression, were well exemplified. In the first instance the man received a severe blow on the head, which produced concussion of the brain; the symptoms attending it were insensibility, a depressed state of circulation, tendency to sleep, and coldness of the extremities, which gradually subsided. But an effusion took place, which caused compression. Here we had our symptoms much more formidable, such as insensibility, an apoplectic stertor, tremors and convulsions. Loss of sense, in the first instance, depended no doubt on the concussion, from which he partially recovered, but still he continued in a state of insensibility from quite a different source, viz. from effusion taking place in the ventricles, as was seen by inspection after death. The lancet throughout was freely used, with other modes of depletion, to control the circulation, and to guard against inflammation of the brain and its consequences. Calomel, which in these cases proves itself a sovereign remedy, was exhibited from the day of his admission up to his demise, with a view of procuring absorption; but, unfortunately, its good effects were not shewn for a very obvious reason; the compression being great, nervous influence was suspended, consequently all the functions of the body were more or less impaired. From the same cause, when the symptoms were more lenient, we had irritability of the sto-



mach, but when the pressure on the brain increased, sickness ceased. There is another circumstance well worthy of notice in this case: about three days previous to his death there was a discharge of about four ounces of fluid from the right ear, which no doubt came from the base of the skull. On his admission there was oozing of blood from the same ear, proceeding, in all probability, from a rupture of the tympanum; and the fluid, passing through the auditory foramen, easily made its escape. Then the cause of irritation being removed, there was a decided alteration for the better, and the patient became sensible for the first time since his admission, and all his symptoms appeared relieved; but they again returned, and death followed.

### WESTERN DISPENSARY,

CHARLES STREET, WESTMINSTER.

#### *Ovarian Dropsy.*

JANE MORRIS, æt. 50, was placed under the care of Dr. Lilburn, on the 11th June, 1830. The patient is a little woman, and has a beard on her chin and upper lip; has borne ten children, and miscarried three times. At the birth of her last child, six years since, she had a very difficult and protracted labour, and some weeks afterwards complained of pain, and felt a tumor in the right side of the abdomen, which has gradually and slowly increased until her menstruation ceased seven months ago, since which period the tumor has increased more rapidly. About twelve months since was put under a course of mercury by her medical attendant, by which she lost most of her front teeth, without producing any diminution of the tumor. The abdomen is now (11th June, 1830) enormously distended, and very hard; breathing laborious; feet and legs œdematous; is unable to walk, or lie in the horizontal posture; tongue white; urine scanty, and high coloured; bowels confined; pulse 106.

R Pulv. Jalapæ. Pulv. Scammonia, aa. gr. iij. Hyd. Subm. g. j. M. f. Pulvis. omni mane sumendus.

R Vini Sem. Colchici, 3ss. Tinct. Digitalis, gtt. x. Aquæ, 3iss. M. f. Haust. bis die sumend.

15th.—Urine more abundant; bowels open only once a-day; other symptoms continue.

R Extr. Elaterii, gr. ½. Extr. Jalapæ, gr. iij. Hydr. Sub. gr. j. M. f. Pil. 6tis horis sumenda. Cont. Haustus.

18th.—Bowels open three times in twenty-four hours; breathing not quite so difficult. To wear a suspensory bandage for the abdomen, with straps over the shoulders.

R Tinct. Iodinæ, gtt. x. Aquæ, 3j. M. ter in dies sumend. Cont. Pilulæ. Omitt. Pulv. cathart. et Vin. Colchici.

19th.—Bowels open three times in twenty-four hours; motions not very relaxed, dark coloured; urine much more abundant; pulse 100.

R Extr. Elaterii, gr. ½. Ext. Colocynth. gr. vj. Hyd. Subm. gr. j. M. f. Pil. iij. 6tis horis sumend. Contin. Tinct. Iodinæ, ex aquâ.

20th.—The bowels have acted eight times the last twenty-four hours; motions copious and watery; urine abundant; breathing more easy; abdomen much less tense; pulse 100, strong.

V. S. e. brachio ad 3xv. Cont. Pil. et Tinct. Iodinæ, ex aquâ.

22d.—Felt her breathing considerably easier after the bleeding; the quantity evacuated from the bowels and bladder in twenty-four hours, upwards of three quarts; complains of want of sleep.

Capt. Ext. Hyoscyami. gr. v. o. n. Cont. Pil. (ut 19°) et Tinct. Iodinæ, ex aquâ.

24th.—Slept better last night than she has done for some months; breathing more easy; pulse 96. Alvine evacuations and urine as copious as in the last report; tongue more moist, but white. Ordered her to drink a wine-glass of equal parts of Hollands and water three times a-day.

Cont. Remedia.

29th.—Continues improving; is able to walk about the room.

Cont. Remedia.

July 2d.—Is able to walk in her garden; abdomen nearly reduced to the natural size; swelling of the legs and feet quite gone down; sleeps well in the horizontal posture; pulse 94; complains of nothing but weakness.

R Inf. Spigelia, 3ss. Tinct. Iodinæ, gtt. x. M. ter indies.

R Extr. Colocynthidis, gr. iij. Hyd. Subm. gr. j. omni mane. Capt. Extr. Hyoscyani, gr. v. omni noct.

6th.—Was able to walk about half a mile to the Dispensary, and back to her house, without inconvenience; appetite greatly improved; bowels open twice or three times daily; pulse 90.

Cont. Remedia (ut 2°)

9th.—Attended at the Dispensary. Convalescent.

### ERRATUM.

In our account of the post-mortem appearances in the case of his late Majesty, in our last No. for "parts compressed within the pleura," read "parts comprised within the pleura."

W. WILSON, Printer, 57, Skinner-Street, London.

# THE LONDON MEDICAL GAZETTE,

BEING A  
WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

SATURDAY, JULY 31, 1830.

## LECTURES ON SURGERY,

Delivered at St. Bartholomew's Hospital,

By WILLIAM LAWRENCE, F.R.S.

### LECTURE LXV.

*Affections of Mucous Membranes—Æzena—  
Epistaxis—Soft Mucous Polypus—Malignant  
Polypus—Diseases of the Antrum—Affections  
of Serous Membranes—Wounds—Collection  
of Pus or Serum in the Pleura—Operation of  
Paracentesis Thoracis—Air in the Chest—  
Effusion into the Pericardium.*

I do not think it necessary, gentlemen, to enter into any general considerations respecting the pathology of the different classes of membranes, because the observations on the particular affections of those membranes in various parts of the course will sufficiently elucidate that subject; and, on comparing the number of subjects which still remain with that part of the course unexpired, I find it necessary to bring the observations that I have yet to offer to you into the smallest compass in which I can place them. I shall therefore proceed just to notice those particular affections of membranes which require more especial attention.

I had occasion, when speaking on the venereal disease, to mention to you ulceration of the mucous membrane of the nose, caries of the bones that enter into the composition of the cavity, and the fœtid discharge accompanying this affection as the consequence of syphilis—which affections, considered without any particular reference to the cause that produces them, constituting what nosologists have denominated *Æzena*; which denotes a disease of the nose, accompanied with fœtid discharge. Syphilis is undoubtedly the most frequent cause of these affections of the nose, but it is not so in all instances. There are cases in which ulceration of the membrane—affections of the bones—and a most fœtid and offensive discharge take

place from the nose, in individuals who have not suffered from syphilis in any shape; and what seems rather extraordinary, you may have such symptoms even in young subjects. I have seen these circumstances—at least I have seen the existence of fœtid discharge lasting for several years in a child; and, although perhaps in some measure alleviated by occasional remedies, not perfectly removed, and ultimately, in consequence of the apparent inefficacy of these means, left pretty much to take its own course.

In such a case, one naturally has recourse to the employment of *local* remedies. Where you have a serious local affection of this kind, various astringent substances, in the form of lotions, may be applied—the sulphate of zinc, the nitrate of silver, the oxymuriate of mercury, are either injected into the nose by means of a syringe, or, putting a small portion of such solutions into the palm of the hand, they are snuffed up—inhaled into the nose. It is necessary in this instance, in the first place, to cleanse the surface of the part which is affected, by means of tepid water; and after that has been done, then the applications that I have mentioned may be made use of, but it is necessary to take care that the fluid does not pass into the pharynx and be swallowed. The employment of such means as are calculated to correct any deviation from health in any obvious circumstances in such patients, and the employment, where no such obvious signs are observed, of alterative mercurial courses with sarsaparilla, may be of benefit.

### *Epistaxis.*

Not unfrequently, hæmorrhage takes place from the cavity of the nose to a considerable extent, and this is technically called *Epistaxis*. Young persons are very subject to bleeding from the nose from trivial causes, and in them the occurrence is always of a trivial nature. A certain quantity of blood is lost, and then the bleeding stops. If the bleeding should be more considerable, rest,

combined with aperient medicines, speedily arrest the hæmorrhage. But in the adult, and in persons advanced in years, hæmorrhage from the nose sometimes comes on to an extent that is alarming to the patient; and the recurrence being frequent, so much blood is lost that it is indeed alarming even to the medical attendant—at all events it is troublesome, and it is very difficult to stop it. There are instances, indeed, in which the quantity of blood lost from the nose is so considerable as to render the patient perfectly pale and feeble, and even apparently to endanger life. In the commencement of an affection of this kind, you will find marks of active congestion about the head—signs of increased determination of blood there—which require, perhaps, the employment of pretty active antiphlogistic means—the abstraction of blood generally, or probably rather locally, by cupping or by leeches; active purging, abstinence, rest in the horizontal position, and the application of cold to the head. There are instances, however, in which this treatment does not arrest the particular symptoms—where hæmorrhage recurs repeatedly, and where it becomes necessary to adopt some local means for the purpose of stopping it. I have already had occasion to mention to you that I consider a saturated solution of alum to be one of the best remedies of the styptic kind; and this may be employed for that purpose in cases of obstinate hæmorrhage from the nose. A saturated solution of alum may be applied (if we think we can reach the direct spot from which the bleeding proceeds) by means of a portion of lint dipped in it, and conveyed to the cavity of the nose by a director, or probe, to the point from which the bleeding proceeds; or the same fluid may be thrown up into the nose by means of a syringe. We are obliged, however, in some instances, to proceed farther than this; and we know no other means, then, of arresting the hæmorrhage except by plugging up the cavity of the nose. If we can stop the front aperture of the nostril (and that can easily be effected), and if we can also stop the posterior aperture by which the nose communicates with the pharynx, the bleeding may then be completely arrested. We should introduce portions of lint up the nostril, carrying them in with a director, or with a strong probe, and stuffing in portion after portion until the cavity is blocked up, and perhaps in that way we may stop the bleeding; but after plugging up the anterior part of the nose, we sometimes find that the blood passes from the posterior aperture into the pharynx, and it then becomes necessary to stop the posterior opening also, which cannot be easily accomplished from the front. In such circumstances, instruments have been employed which consist of a portion of watch-spring at the end of a metallic stem,

like a probe. This is contained in a tube, and passed with the tube through the anterior opening of the nostril into the pharynx; the instrument in the tube is then forced out, and the spring occasions the end to curve forwards into the mouth from behind the palate. You can then fix to the end of this instrument a string, with a plug of lint, and draw it back so as to fill the posterior aperture of the nostril; and in that way you plug up the posterior opening of the nostril. You can easily stop up the anterior aperture, and this puts an effectual end to the loss of blood from the nose.

### *Polypi.*

The mucous membranes of the body generally, and that of the nose more particularly, are subject to morbid growths from their surface, to which the name of *polypi* is given. These consist of tumors which adhere to the membranes that give rise to them, by means of a comparatively narrow neck, or basis.

[Mr. Lawrence here presented some specimens of polypi of the nose, which were various in point of figure, yet all of them agreed in the circumstance of having a narrow pedicle, or neck, by which they adhered to the membranes from which they had derived their growth. He also presented some others, of a pyriform shape.]

The growths which are thus produced from the mucous membrane of the nose are various in point of structure; the most common of them are a description of texture very much resembling the mucous membrane that produces them: such are called *soft mucous* or *gelatinous* polypi. There are others which are of a firmer texture—something of a fibrous nature; these, however, are not very common in the nose. These are called *sarcomatous* or *fleshy* polypi. There are others which are of a malignant character, and which are pretty closely analogous to those growths that I have already described to you under the name of *fungushæmatodes*: these are called *malignant* polypi.

With respect to the more common kind, the mild or mucous polypi, they grow from the exterior surface of the cavity of the nostril—that is, they grow from the turbinated bones, or from the lower part of the ethmoid bone. I do not know any instance in which a polypus of this character has been found to proceed from the septum of the nose.

They produce no inconvenience to the patient in their early stage; they only become perceptible to patients in consequence of their increase in bulk, and the uneasiness which this increased size produces. They fill up the cavity of the nostril—they prevent the patient from breathing through the nose—they produce uneasiness in consequence of the pressure arising from their bulk upon the membrane and upon the bony parietes of the nose.



The bulk of these mucous polypi varies according to the state of the atmosphere. In moist and damp weather they swell, become more considerable in size, and then the passage of air through the nostril is obstructed. In dry weather they shrink again, and the patient is able to breathe through his nose more freely.

When the patient complains of the inconvenience arising from the polypus, and we look into the nostrils, we observe that the polypus presents itself towards the anterior part; and there we see it of a greyish or white semi-opaque appearance, looking almost like a soft jelly. If we press upon them with the end of a probe, we find they are hardly sensible—unless the pressure acts upon the surrounding parts, the patient is hardly aware that the growth is touched. When we come to extract them, we find that they are perfectly soft, very compressible—they yield, give way under the pressure of the forceps which are used in extracting them—a kind of serous fluid escapes, and they become reduced in bulk. They seem to consist of an accidental production very similar to mucous membrane in its nature. The only mode of effectually getting rid of these growths is their removal by surgical operation.

[Mr. Lawrence again referred to the preparations, and said, these, as I have already mentioned to you, are specimens of various polypi taken out of the nostrils, which will give you an idea of the form and mode of their attachment. Mr. Lawrence then presented a specimen where the polypus was seen actually hanging from the bones. Those were of the mild, the benignant kind—the gelatinous or soft polypi.]

Various modes are described in surgical writings for getting rid of these polypi of the nose. For example; ligatures, caustic, cautery, tearing them out—extraction, as it is more generally termed, by means of forceps. Now the latter, in point of fact, is the only mode which is commonly used. Ligatures cannot be applied to polypi in the nose; caustic can hardly be applied, or at least there is as much chance of applying it to the sound parts as to the diseased growth only; and the actual cautery is much too violent and severe a mode of proceeding for cases of this kind. The mode then in which we proceed to get rid of a polypus of the nose, is to seize the growth with a pair of forceps—to endeavour to take hold of it as near as we can to the root or pedicle by which it is attached to the mucous membrane—and then either to drag it out or to twist the root and tear it out; it is, in fact, a mechanical proceeding for removing the growth.

[Mr. Lawrence then exhibited the kind of forceps that were used for that purpose,

which, he said, were a little curved at the ends, and roughened on the inside, so that they might have a very firm hold upon the growth.] Now you see (continued the lecturer) that they are of sufficient strength to enable you to hold them firmly, and to apply them with the degree of force that may be necessary to drag the polypus from the part to which it is attached. Another kind of forceps may be occasionally used, such as I now shew you. These forceps are very useful on various occasions; they consist of a pair of blades made like dissecting forceps, but with a slide, so that when you have fixed them on the part, you slip down the slide, by which they remain on, and continue to press upon the part to the requisite extent without your holding them. You may have them differently constructed at the ends, so as to take a firm hold, according to the degree of tightness that is necessary on the occasion on which you may apply them.

Sometimes you have a single growth, one production and no more, in the nose; and the patient is very fortunate when such a state of things occurs. More commonly there are several growths, proceeding from various parts of the mucous surface, so that the repeated introduction of the forceps is necessary in order to clear the nostril.

Now when you consider how imperfect a view you have of the cavity of the nose from the anterior aperture of the nares, you will be aware that the operation of extracting polypi is a very blind sort of proceeding. When you have taken away the first one that may present itself, and the nose has become filled with blood in consequence of the hæmorrhage proceeding from the extraction of that one polypus, all the rest of your proceedings are in the dark. You introduce the forceps into the nose as widely as you can, and grasp any thing with which they come in contact, and drag it out. You may then twist the forceps about from side to side, so as to detach the root, and by that means bring all the polypus out; and you must repeat these manœuvres as effectually as the case will enable you to do, till you have completely cleared the nostril. If these polypi have been neglected for some time—if they have been allowed to grow to a large size, they will become so considerable, as mechanically to distend the cavity of the nose, and to produce very considerable inconvenience, in consequence of pressing on the surrounding parts. They may produce a pressure that will interfere with the opening of the nasal ducts, and consequently cause an impediment to the excretion of the tears. They will press down the soft palate—they will pass backwards through the posterior opening of the nares into the pharynx. Polypi, of course, may present themselves just as well at the posterior part of the nos-

tril as at the anterior. Thus on depressing the tongue and looking into the throat, you will see the polypi presenting themselves.

Not long ago a child ten years old was sent to me to be examined, and it was said that he had a polypus. When I looked at the child and saw it was so young, I could hardly suppose that a polypus existed, for the disease is not incidental to young persons; but the mother said that the child had not swallowed well, and she thought there was something in the throat; and when I looked at the throat, I saw a polypus presenting itself from behind the posterior part of the soft palate. I took the forceps and carried them as high up in the nostril towards the neck of the tumor as I could, with the hope of embracing the neck of the tumor anteriorly, so as to draw all the growth out through the anterior part of the aperture of the nose. I drew out a large-sized piece, and, in fact, I concluded that I had drawn out the whole; but the child said that he still felt something was left behind. When I again looked at the throat, I saw that the tumor behind was just the same; I therefore found it necessary to introduce the same forceps behind the soft palate, and with my right hand I drew out a large piece from the throat. I believe this was a portion of only one polypus, the anterior part of which I took out when I first introduced the forceps. I think altogether the growth was not less than the size of my three fingers on the surface, while in length it extended from the anterior part, where it presented itself at the front opening of the nares, to the posterior part behind. There has been no re-production of the tumor in that case.

The removal of the polypi in the way I have mentioned is, in general, only a temporary cure: the growths are re-produced, and after a time the nostrils become again obstructed, and we find it necessary to recur to the same means for relieving the patient. In the case of a single polypous tumor, which has been very effectually removed—where you have been able to carry the forceps up so as to fix them on the neck or peduncle of the tumor, and thus to draw it away, a very considerable time may elapse before the tumor is re-produced. I removed a polypus of that kind for a gentleman a long time ago: it came out very completely, and when I removed it, the nostril was rendered perfectly clear: there was only a single tumor. I think about four years afterwards he sent for me again; the tumor had been re-produced, and had attained about the same size as the former one, and I again extracted it in the same way. This was about three years ago, and I suppose the tumor has not been again re-produced in that case.

The tumors that arise in the nose of a malignant character take place under dif-

ferent circumstances, and present themselves under altogether different appearances from those that belong to the polypi that I have now mentioned. The malignant polypi are formed with great pain—the mild or mucous polypi form without any annoyance to the patient. The malignant polypi present livid, dirty, bleeding surfaces; slight pressure on them with the end of a probe, or with a director, produces a copious flow of blood; the patient experiences very considerable pain, more particularly in proportion as the polypi increase in size. These growths, after a certain period, increase very rapidly; they distend the cavity in which they are situated—they extend towards the roof of the nostril, producing great pain by their pressure on the bones—they depress the palate—they produce ulceration of the mucous membrane, and a carious state of the bones; and from these various local effects, and the great irritation and pain which the patient experiences, they ultimately terminate fatally. In some instances they make their way through the roof of the nostril into the cavity of the cranium, so that ultimately there are symptoms of pressure on the brain produced, in addition to the symptoms which usually belong to the growth of the polypus itself.

[Mr. Lawrence here exhibited a specimen of a growth of this kind, which had attained a very formidable magnitude in quite a young subject;—the patient died in the hospital. He pointed out one of the eyes, and the nose—the latter was very much enlarged. There was a section of the tumor exhibiting a cartilaginous and medullary texture, filling up the whole cavity of the nose, and extending through the cribriform plate of the ethmoid bone into the cavity of the cranium, where a large mass projected into the skull. Mr. Lawrence then presented the portion constituting the opposite side of the section, in which there was a firm cartilaginous growth. He pointed out the part extending into the skull, and also the opposite eye, with the optic nerve of that side stretching round the tumor. The principal mass of the tumor extended into the cavity of the cranium.]

I need not observe to you that we have no means of remedying by surgical operation an affection of this kind; we can only witness the progress of the complaint, and perhaps adopt occasional means for palliating the sufferings of the patient.

#### *Diseases of the Antrum.*

The cavity which occupies the body of the superior maxillary bone—the *antrum*, may be the seat of inflammation, and of successive formations of matter, which become collected in the part, the natural opening by which the antrum communicates with the

nose being obstructed. Under such circumstances it becomes occasionally necessary to make an opening into the cavity of the antrum, to let the matter out. This is most advantageously accomplished by removing either the first or second molar teeth. The sockets of these teeth are separated from the antrum by a very thin plate of bone, so that when we have removed either of them, the sharp end of an ordinary probe, or any other pointed instrument, can be carried into the cavity to let out the matter.

The antrum is also occasionally the seat of morbid productions, perhaps of the polypous kind, or perhaps of a malignant nature—perhaps of a sarcomatous description, which arise within the cavity, and slowly increasing in size distend the bony parietes opposite them, enlarge the dimensions of the cavity, and encroach, by their enlargement, upon the parts that are situated in the neighbourhood. These growths produced in the cavity of the antrum will press upwards on the inferior portion of the orbit, and interfere with the parts contained within that cavity;—they will depress the anterior part of the roof of the mouth, causing a prominence in that situation;—they will enlarge the cheek externally, and in fact, in the continued progress of these growths, by first diminishing the thickness of the bony parietes that constitute the sides of the cavity—rendering them very thin, and then distending them, they occasion a great increase of size in these parts, and ultimately encroach very seriously on all the neighbouring organs. They frequently loosen the teeth, and push them out, and the growths then occasionally make their way through the alveolar processes, presenting themselves in the cavity of the mouth.

In books of surgery you find various operations proposed for exposing the cavity of the antrum, and clearing away the growths thus produced. You will not, however, often, I think, have occasion to perform an operation of this kind: I cannot say that I ever found it necessary to do so; for although I have seen many instances of serous growths proceeding as far as I have mentioned to you, and producing various inconveniences in those important organs, the cases generally have not proceeded so far that I have judged it expedient to interfere with them by operation, nor have I ever seen an operation of that kind done by others. I cannot respecting these affections state any thing on my own experience; I can say nothing further than what you will find already recorded in surgical works; therefore I do not think it necessary to enter into details on the subject. I will only notice here one circumstance in respect to these very serious cases, and that is the mode adopted by Professor Pattison of the London University. In an edition of Mr. Burns' work upon the Surgical Ana-

tomy of the Head and Neck, he mentions<sup>s</sup> the principle in such cases of tying the carotid artery, in order to cut off the supply of blood from the morbid growth; and he gives some instances in which the operation was attended with much diminution of the vitality of the newly-produced substance, and where a large portion had sloughed away. I do not know that there is any instance in which a complete cure seems to have been effected, yet the evidence he has adduced is sufficient to shew, that a considerable influence over the growth may be produced in that way, and probably we might deem it expedient to make an attempt of this kind in preference to the patient undergoing the serious operation of trephining, and cutting away a large portion of the upper jaw—a mode which is mentioned in various surgical writings.

#### *Wounds and Operations involving serous Membranes.*

Wounds which penetrate into the cavities that are lined by the *serous membranes* of the body, require great attention. A wound penetrating into the chest or the abdomen is very likely to produce general inflammation of the surface of the cavity thus exposed, and such wounds are not uncommonly complicated with protrusion of some of the parts contained in those cavities.

In the latter case, that is, if protrusion of any of the contents take place from a wound, whether of the chest or the abdomen, we must, in the first place, gently replace the protruded part, carry it back into the cavity from which it has been displaced, and then our object is to approximate the edges of the wound, and to retain them in apposition. By so doing we shall be most likely to prevent the occurrence of inflammation in the cavity. In the case of a large wound into a cavity, whichever it may be, we probably find that, although we have replaced the parts that had protruded, we are not able to retain them within the cavity without adopting some effectual means for approximating the edges of the wound. I should have no scruple under such circumstances, in the case of a wound into the chest, but more particularly of one into the abdomen, in applying sutures very cautiously, carrying them only through the integuments, and taking care that they are so placed as not to include the serous membrane.

When this has been accomplished, the further treatment of the case will consist in the employment of all the means that are calculated to prevent the occurrence of inflammation; and generally speaking, these means should be of an active kind. Inflammation is likely to take place after these wounds, and if it once occur in an extensive cavity like the peritoneum or the pleura, it so rapidly spreads over the whole surface, that you can hardly be too active in the anti-



phlogistic treatment; and this should be continued until all risk of inflammation is completely at an end.

There are various circumstances under which making a surgical opening has been considered necessary into the cavity of the thorax, in consequence of penetrating wounds, particularly those made by gun shots. Sometimes the projectile enters the cavity of the chest, and remains there, or portions of clothing are carried in by it; sometimes blood is effused into the cavity in consequence of the injury, and either from the presence of foreign bodies, or from the effusion of blood, inflammation of the pleura and the formation of matter. *Empyema* is the consequence of inflammation of the pleura, and if there be no ready outlet for the matter that is consecutive upon the injuries in question, it increases in quantity, and by interfering with the surrounding parts, the heart, the other lung, or the neighbouring viscera of the abdomen, it produces effects that will be rapidly fatal to the individual.

Again, large effusions of serum sometimes take place in the chest, constituting *Hydrothorax*.

Further: it occasionally happens that an abscess, whether it result from common inflammation of the lung, or from tubercular disease of the lung, bursts into the cavity of the chest, and from the opening thus produced, which may be connected with some of the bronchial tubes, air escapes into the pleura, and you have one side of the chest distended with it. Under these various circumstances—from the presence of foreign bodies—from the effusion of blood—from the formation of matter in consequence of inflammation—from the effusion of serum—or from the introduction of air, from the bursting of an abscess—it may become necessary to make an opening into the cavity of the chest, in order to give issue to these various matters: it may become necessary to perform the operation of *Paracentesis thoracis*—tapping the chest.

The best situation for making an opening into the chest, provided you have your choice of the part, is between the fifth and sixth ribs, or between the sixth and seventh ribs, in a direction between the anterior and lateral parts of the chest. If you make the opening on the left side, you at all events must take care to go far enough back to be completely clear of the situation of the heart. In making any opening into the chest, it might appear to you to be advisable to make the aperture in the lowest or the most depending situation; but you will recollect that the superior surface of the diaphragm is in contact with the surface of the ribs to a considerable extent, so that if you make the opening very low, you might cut against the

surface of the diaphragm, and might not succeed in giving issue to the fluid which you wish to evacuate from the chest. And where there has been previous inflammation, the part, where the diaphragm and the surface of the ribs come in contact, is occupied by an effusion of lymph, and adventitious membranes are formed in consequence of that effusion, that really will not permit you to perforate the cavity of the chest, so as to evacuate the matter. Hence the interval between the fifth and sixth ribs, or between the sixth and seventh ribs, may be considered as the most eligible place for the performance of the operation of *paracentesis* of the chest.

Further: it is advisable to keep upon the upper margin of the lower of the two ribs, between which you make the opening, in order to avoid wounding the intercostal artery.

In the case of *empyema*, that is, of matter contained in the cavity of the chest, you must of course take into consideration the previous symptoms, which will enable you to decide whether matter probably has formed or not. You must also consider, in conjunction with these symptoms, the actual state of the patient at the time you make the examination. If then the patient have the symptoms indicating inflammation of the pleura—if there be severe pain at one side of the chest—if there be that degree of difficulty of respiration which is produced by inflammation of the pleura—if, after a certain time, rigors come on, indicating the formation of matter—if, at the time you examine the patient, you find the outside of the chest swelled—*oedematous*, (for the formation of matter in the interior of the chest in that quantity in which we frequently find it is formed, is attended with an *oedematous* tumefaction of the cellular membrane externally, similar to that which surrounds a phlegmonous abscess in any part of the body)—if, in addition to these circumstances, you find that there is an obvious enlargement of one side of the chest as compared with the other; if there be a partial protrusion of some of the intercostal spaces indicating the existence of matter in some part; if you find on percussion that there is a dull or dead sound of the chest where you make the trial, and the absence of that sound which indicates the healthy performance of respiration; and if you also find (supposing inflammation to have taken place on the left side of the chest) that the pulsation of the heart is not perceptible in its natural situation, but if, on the contrary, you feel it against the middle of the sternum, or even at the right side of the chest, you may then pretty safely conclude that there is a collection of matter in the cavity of the pleura. This collection of matter may be-

come so extensive that if it occur on the left side of the chest it will completely push the heart over towards the right side. You find the absence of the pulsation of the heart on the left side of the chest, and you find it beating on the right side. If the collection of matter take place on the right side, the diaphragm is depressed by it, and the liver is pushed down, so that you feel its edge much below its natural situation in the cavity of the abdomen. These are circumstances by which we can estimate tolerably accurately the existence of matter in the cavity of the chest; and when they exist in this well-marked form, they would justify you in making an opening through the parietes of the chest for the discharge of such matter. You will ask, is it probable that the patient will be saved by making such an opening? Why really it is very doubtful—the circumstances are very serious. There are many circumstances which produce difficulty as to the question of recovery: however, in such a case, the progress of the affection, if left to itself, must necessarily be fatal; and the desperate situation in which a patient is placed, if left to himself, renders it quite justifiable to make an attempt to save him.

Now when we come to examine the body after death in instances of this kind, we find the whole interior of the cavity that contains the matter lined by a thick stratum of what we should call coagulable lymph—a kind of adventitious false membrane, perhaps of a quarter of an inch or even more in thickness. We find the cavity converted very much, so far as the surface goes, into a state similar to the cyst of an abscess. We find the lung condensed, and reduced in size; perhaps reduced to one-fifth or one-sixth of the natural magnitude; shrunk, and closely agglutinated to the side of the chest. We can immediately see, therefore, that there are greater difficulties, under such circumstances, in the way of the healing process than in other cases of abscess. If you had an abscess in any of the soft parts of the body, when you have evacuated the matter the parietes, or sides of the abscess, will contract; they can approximate, and in fact do approach to each other so as to obliterate the cavity. But here you have the parietes of the cavity in a great measure bony, so that they do not admit of approximation. The condensed lung cannot expand so as to fill up the space that it formerly occupied. We find, therefore, that after letting out the matter contained in such a cavity, the space that was previously occupied becomes more or less occupied afterwards, by the air that passes in at the same opening through which the evacuation took place, and the air thus introduced into the chest produces decomposition of the matter that remains in the cavity, which be-

comes extremely fetid and irritating; and this change in the state of the matter alone is almost a sufficient cause for the production of a feverish disturbance of the constitution, that adds much to the risk of the patient. Under certain circumstances, however, the patient does get over this difficulty: perhaps the lung becomes partly expanded; and what is very curious, after a length of time the side of the chest contracts, so that after a considerable period has elapsed, and more particularly if a complete cure takes place, the affected side undergoes a remarkable diminution compared with the sound side of the chest. The chest becomes flattened apparently, so that the intercostal spaces become almost obliterated; and in an old case of that kind, the contrast between the sound and the affected side of the chest is very remarkable.

A case of empyema must of course be regarded as one of a very serious kind; the prospect of the patient is very unfavourable whatever course you may pursue; but under these circumstances, the operation by which the pus is to be evacuated, affords the only prospect of saving the patient, and therefore it ought to be undertaken in such a case.

With respect to the effusion of water into the chest—*hydro-thorax*, the case is still less favourable for operation. This of course can only be undertaken if the effusion exist on one side; if it exist on both sides of the chest we cannot for a moment entertain the idea of making an opening into the cavity.

There are, perhaps, very few instances in which the effusion of fluid into the chest (or *hydro-thorax*) is an *idiopathic* affection, that is, arising from disease occurring in and confined to the serous membrane. The pathologists who have written on this subject, and who have had the most extensive experience, acknowledge that the cases of idiopathic *hydro-thorax* are extremely rare. In the majority of instances, the effusion of water into the chest is merely a symptom of organic disease in the heart, lung, or other part of the body; and of course in such cases the removal of the water from the chest can be of no essential benefit to the patient. I have never seen any instance in which it appeared to me advisable or likely to contribute even to the temporary relief of the patient to make an opening into the chest for the sake of letting out the water, and therefore I suppose the necessity of such an operation is of very rare occurrence.

With respect to the cases of the admission of air into the chest, I have had occasion to mention to you that in wounds of the lungs, where air escapes into the cavity of the chest, where a collapse of the lung is the consequence, and where the introduction into one side of the chest of air produces a diffi-

culty in breathing, in consequence of the mediastinum being forced to the other side and interfering with the functions of the other lung, it may become necessary to make an opening into the chest to let out the air thus confined on one side.

The same observation applies to cases which have been called by the French *Pneumo-thorax*, that is, where an abscess has occurred in the lung, and where it has burst into the cavity of the chest, and a communication between the abscess and some of the bronchial tubes still exists, so that the air taken into the chest in inspiration has passed out through the opening into the cavity of the pleura.

I saw a case of this kind in a medical man some time ago, where, after symptoms of active inflammation of the lung, indicating that degree of inflammation which would have attended the formation of abscess, symptoms indicating the admission of air into the chest took place. These symptoms consist in the production of a tympanitic or hollow sound on percussion on the side of the chest into which the air has escaped. On tapping with the hand on the chest where air is thus confined, you have that kind of noise and sensation which is produced by tapping on the abdomen where the intestines are distended with air. There is, moreover, in such cases a very peculiar sound communicated to the ear. If the ear be put in contact with the chest, the passage of air into the cavity produces what Laennec has called a *metallic tinkling*, that is, a sound similar to that produced by dropping a shot into a metallic vessel; and, indeed, I do not know any comparison that will give you a more accurate idea of the sound. When you put your ear to the chest it gives precisely that sensation. The existence of this sound, this metallic tinkling, combined with the tympanitic sound felt on percussion of the chest, and connected with the previous symptoms indicating the existence of inflammation and the formation of matter, and the further combination with those circumstances of great difficulty and distress in breathing, arising, in the first place, from the collapse of the lung on the side where the air has been introduced into the chest, and secondly from pressure against the mediastinum, occasioned by the air thus introduced into the chest interfering with the expansion of the lung on the other side, sufficiently point out the nature of the affection.

The reasons for making an opening into the chest, under such circumstances, are the great distress of breathing that is immediately produced by the circumstance that I have mentioned, and the necessity of giving to the patient some relief from those very urgent symptoms under which he labours. The great probability in this case, or rather,

I may say, the certainty is, that if the disease continue the patient will perish. The only question, so far as the operation goes, is, whether we can give temporary ease, whether we can lessen the great difficulty of breathing which the circumstances that I have mentioned produce. In the instance to which I have referred, on making an opening into the chest there was a sudden escape—a gush of air from the cavity, and the patient, from a state of the greatest distress, in consequence of the urgent dyspnoea, became perfectly easy. From the progress of the affection, however, he subsequently died; but he obtained complete relief at the moment, and that is all the operation, under such circumstances, can accomplish; but it seems to me that it is a sufficient reason for having recourse to the operation.

Respecting inflammation of the *pericardium*, and the effusion of fluid into it—mention has been sometimes made of an operation for removing it, though I believe there is no instance recorded in which any such operation has been performed. I hardly know, for my own part, judging from my own experience, of any combination of symptoms arising that would justify an attempt of that kind: I therefore have nothing to say to you respecting the operation of tapping the pericardium.

## STRICTURES

ON

AN ESSAY BY DR. CORRIGAN,

ON THE

## MOTIONS AND SOUNDS OF THE HEART.

By J. HOPE, M.D.

Member of the Col. of Physicians, London, &c.

WHEN new views are broached with confident assertions, and seconded by plausible experiments, they possess a speciousness which is sometimes detrimental to truth; and such we conceive to be the case with respect to an Essay reviewed in the 127th No. of the Medical Gazette, on the Motions and Sounds of the Heart.

As the subject of organic diseases of this organ, hitherto involved in so much obscurity, is gradually deriving light from the piercing ray of modern discovery, it is desirable, in order to facilitate the process of illumination, that error at least be exposed, even though



the whole truth cannot at once be displayed in its stead.

It is for this reason that we offer the following observation on a theory whose only merit appears to us to reside in the ingenuity which renders its inaccuracies dangerous. The author sets out with a radical error—that the arterial pulse is not synchronous with the impulse and first sound of the heart. Having embraced this, he is betrayed, by a laudable but overstrained zeal, into a singular series of misconceptions of the opinions of others—of inaccurate experiments, and of erroneous and inconsistent inductions.

We shall follow him briefly through the work of demolition—a necessary preliminary to the establishment of his own hypothesis. He says—

“All physiologists assume that the heart comes forward during the systole of the ventricles. It is universally admitted that during their systole, the ventricles contract in all directions, the sides coming together, and the apex of the heart approaching the base. It was obvious, therefore, to all that the simple contraction of the ventricles, so far from making the heart approach the ribs, should draw it deeper into the chest, and hence reasons were sought for to reconcile the diminution of size, and consequent retraction, with its impulse against the side.”

Lennac and Hunter offered the following solution of this difficulty.

“The blood being thrown into a curved tube, viz. the aorta, that artery at its curve endeavours to throw itself into a straight line to increase its capacity, but the aorta being the fixed point against the back, and the heart in some degree loose or pendulous, the influence of its own action is thrown upon itself, and it is tilted forward against the inside of the chest.”

The author controverts this solution, by maintaining that as the aorta arches obliquely forward from left to right, any effort to straighten itself would move the heart, not forwards and towards the left side, but away from it and towards the right. This objection involves an oversight. The author did not perceive that the lateral movement would be opposed by the atmospheric pressure in the lungs, and also by the central attachments of the pericardium. Now, “as an elastic tube, suddenly injected, will tend to

elevate its loose end, whatever may be the direction of the curve with respect to its orifice\*,” the motion will take place in that direction where it meets with least resistance; and this, in the case of the aorta and heart, is forward and towards the left. Hunter’s explanation, therefore, is accurate, and consistent with the anatomy of the heart and great vessels. But the author advances another objection to it.

“Independent of these objections, his theory contains an error in physics so striking, that were it not deemed objectionable in some, to apply the laws of physics to the living body, I should have considered it unnecessary to have pointed out its anatomical errors.

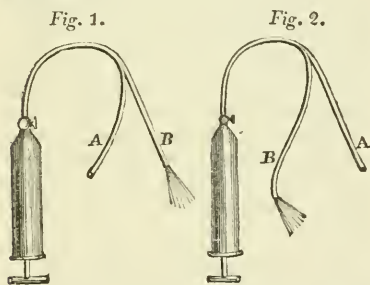
“Hunter says, that the aorta being curved, will, after each impulse, endeavour to straighten itself. This might be true were the aorta before each impulse empty, and the inner wall of the arch so much doubled upon itself as to make an angular projection into its cavity, which is, however, never the case. The artery being always full, the re-action which takes place must be in the direction of the axis of the orifice of the aorta, no matter how the artery afterwards curves.”

He avers, therefore, that the principle embraced by Hunter—viz. “that a bent elastic tube, like the aorta, will be straightened by the action of a fluid impelled through it;” and the corollary of Bostock, “that the injection will tend to elevate the loose end, whatever may be the direction of the curve with respect to its orifice,” are both erroneous;—and he asserts instead, “that the loose end will be moved, not by the impulse of the fluid injected through the tube, or by its re-action on the curve, but by the re-action generated at the orifice when the fluid quits the tube.” To substantiate this assertion, he says—

“I shall here, as on every occasion where possible, instead of referring to abstract laws from physics,” (a reconsideration of which, however, we would recommend,) “have recourse to direct and simple experiment. To demonstrate the fallacy of the assertion made by Bostock, Magendie, Hunter, Sennac, and indeed by all physiologists who have supported their opi-

\* We, for the present, assume this principle of Dr. Bostock’s to be correct.

nion, take the ordinary stomach-pump, with a long curved elastic tube attached. Inject water forcibly through it, and you will find that when the orifice is curved in towards the pump, the extremity of the tube will move outwards, or the tube will tend to straighten itself. If the orifice be pointed outwards or away from the pump, the loose end will move inwards, or the curve will be increased. When the orifice is turned to the right or the left side, the tube will move in the opposite direction. These movements of the tube prove to demonstration, that the straightening of the curve, when it does take place, instead of being independent of, is altogether governed by, the direction of the discharging orifice. The accompanying diagram will explain my meaning better than words.



“Fig. 1. A represents the tube with its orifice turned inwards. B, the position which the same tube assumes from the re-action generated at the discharging orifice.—Fig. 2. represents the experiment reversed.—A, the tube with its extremity or discharging orifice turned outwards. B, the same tube driven in, or the curve increased by the re-action of the fluid rushing out.”

We have repeated Dr. C.’s experiment before a number of competent judges, and cannot arrive at the same conclusions.

We employed an elastic tube a foot long, placed its orifice in the various positions indicated by the author, and found that, in every instance, its only tendency was to straighten itself and throw the extremity outwards. The tube had a natural curve, which offered a resistance equivalent to two or three ounces. We placed a finger underneath the curve, and raised it nearly to the straight position; yet the injected fluid

had power to raise it from our finger and elevate it still further. Though we directed the orifice to one side, at the same time supporting the arch on the other, the straightening tendency was still equally exerted upwards, and it was observed invariably to commence at the end of the curve nearest to the syringe.

We, therefore, quote the author’s own experiment as conclusive in favour of Hunter and Bostock’s position, and fatal to his own. The fallacy which deceived him we suspect to have resided in the length of his tube, the weight of which, co-operating with any slight re-action generated at the discharging orifice, threw the tube accidentally into the positions which he describes. In our experiment, this source of fallacy was obviated by our employing a tube so short as to counteract, by its rigidity, the effects of its gravity and discharging re-action.

The author proceeds—“there is yet another objection to Hunter’s explanation of the impulse against the side, even admitting it to be caused by the straightening of the arterial tube. Were his explanation true, the impulse against the side should not be felt until after the arterial pulse: for the arteries being always full, and fluids being almost incompressible, the pulse must be felt in the arterial branches the moment the ventricle begins its contraction, while the heart should not strike the side until a moment after the pulse is felt, when the ventricle has driven its contained blood into the aorta, and has dilated its arch.”

We confess ourselves surprised at the want of penetration evinced by this objection. The fullness of the arteries, and the incompressibility of the fluids, are the causes why the straightening of the arch commences at the moment the ventricle *begins* its contraction; and as the motion thus generated at the arch operates on a remote point—viz. the apex of the heart—that point must move with corresponding rapidity through the space which it has to traverse in rising from its quiescent position to the ribs. Now, as this space does not amount to an inch at the utmost, the movement would be accomplished with a celerity which would render the actual non-synchronism of the pulse with the impulse so slight as to be totally inappreciable

to our senses. The inconsistency of the author's argument becomes still more glaring if we admit, for a moment his own position, maintained in a later part of the work, that "the ventricle contracts powerfully and with the rapidity of lightning." Can imagination, then, conceive of the velocity with which the heart would strike the ribs? Can even the author conceive of a sensible non-synchronism?

Having shewn the insufficiency of the arguments adduced to subvert the theory of Sennac, Hunter, and Bostock, we may now state that we concur with the author in believing that the injection of the aorta is not the cause of the heart's impulse. Our reasons, however, are different from his, and these we reserve for the sequel. Remitting also, for future consideration, his remarks on the diastole of the auricles and the contraction of the muscular fibres of the heart, as causes of its impulse, both of which, as well as Mr. Alderson's theory, he pronounces inadequate to the purpose, we proceed at once to examine the theory which he has erected above the *dissecta membra* of his mangled predecessors.

He asserts, "that the heart's impulse against the side, and the dull sound accompanying it, are produced by the rush of blood into the ventricles, and are dependent, not on the systole of the ventricles, but on that of the auricles."

He supports his assertion thus—

"The arterial pulse being exactly synchronous with the contraction of the ventricle, and the striking of the heart against the side being, according to all physiologists, a consequence of that contraction, it follows that the arterial pulse should be felt a moment before the heart strikes the side, or that at the farthest, the impulse against the side and the pulse should be synchronous. Is it so? or are they even synchronous? They are not. I know that my readers will be startled by this assertion."

And so, in sooth, we were. Indeed we felt as if exasperated from a dream of eight or nine years, during which period our imagination had never once suggested to us that the non-synchronism of the pulse and impulse was a physiological condition, though we have constantly been in the habit of simultaneously placing the ear on the stethoscope

and a hand on the pulse, for the purpose of ascertaining the said non-synchronism as a symptom (and we have found it a valuable one) of disease.

The author proceeds—"But let the reader before he discredits my assertion that they are not (synchronous), but that the impulse of the heart against the side is anterior to the arterial pulse, place the index finger of his right hand on the point where his own heart beats most strongly, at the same time keeping the thumb or forefinger of the left upon the radial artery of his right hand. When his heart is beating slowly and forcibly he will perceive distinctly that the first tap is against the ribs, the second from the pulse.

"The second tap indicates the precise moment of the contraction of the ventricle; the first, the heart's impulse against the side: the contraction of the ventricle is consequently posterior to the impulse of the heart. An effect cannot precede its cause; therefore, the contraction of the ventricle which follows cannot produce the heart's impulse, which has gone before. This experiment on the side and wrist was conclusive in my mind, that the contraction of the ventricles could not be the cause of the heart's impulse, and convinced me that the statements given by all physiologists of the heart's movements were erroneous, and that the position assumed by all, namely, that the heart strikes the side when the ventricles are contracting, was false. Some other cause of the heart's impulse was therefore to be sought."

Willing to mistrust our own previous observations, we set soberly and dispassionately to work to repeat the author's experiment, not only on ourselves, but extensively on our friends—non-medical as well as medical, and likewise on horses—assisted by Mr. Field, a highly intelligent veterinary surgeon and expert auscultator. We recommended to individuals examining themselves to place the hand on the temporal artery instead of the radial, as more convenient; and we took the precaution, when examining others, to make one person feel the pulse and a second the heart, each indicating by a motion not visible to his fellow the moment when the pulsation was felt.

It was universally agreed that, except in the case of disease, the actions were synchronous. The few who



thought that in some cases, especially in horses, they did not coincide with mathematical precision;—allowed that to pronounce such a discrepancy non-synchronism, would be giving undue latitude to the imagination—in colloquial phrase, straining the point. But admitting, for the sake of argument, a slight degree of non-synchronism—and the author contends for no more—such a degree is totally inconsistent with his own theory; for he avers that the auricle contracts *slowly*, producing the *long* sound and impulse. These must, therefore, be completed before the pulse can be felt; consequently the non-synchronism must amount to an interval equal to the long sound! Even the author does not venture to require his readers to believe this; but, sensible of the inconsistency, he attempts to reconcile it by saying, that “the impulse against the side is not felt until the auricle has nearly *finished* its contraction, while the impulse of the arteries is felt at the very instant the ventricles begin to contract,” which contraction, he states elsewhere, takes place “as quick as lightning.”

This explanation, however, does not mend his position, because it is subversive of another leading principle of his theory; viz. that the impulse is occasioned by the auricular systole. For, as the impulse is not felt until the auricle has nearly *finished* its contraction, and as this contraction, according to the author, is *slow*, we must necessarily infer that the current of the fluid is slow likewise; especially, considering that there are only about two ounces to be discharged through an aperture of at least  $3\frac{1}{2}$  inches in circumference. What is the conclusion? That so sluggish a current would not have momentum enough to produce any impulse at all! The author's dilemma is therefore complete; for, if the auricular contraction be *quick*, it cannot produce the *long* sound; if it be *slow*, it cannot occasion the impulse, and it must occasion a greater degree of non-synchronism than he contends for and than exists in nature. Moreover, if the ventricle contracted “powerfully and with the rapidity of lightning,” as the author asserts, what would be the nature of the pulse? Like a thunderbolt, we suppose, to use the same hy-

perbolical language. To speak intelligibly, it would in all cases, without discrimination, be inconceivably hard, jerking, and incompressible, and it would possess these characters in a higher degree, in proportion as the ventricle was more dilated, no matter to what extent its parietes were attenuated and enfeebled. For in every case the whole of the blood would have to be expelled, and expelled “with the rapidity of lightning,” in order that the ventricular parietes might come in collision with sufficient violence to occasion the second sound of the heart—a position maintained in a subsequent part of his work. This is absurd, and we might have saved ourselves the trouble of exposing the absurdity, by asking another simple question; viz. how can the ventricle contract “with the rapidity of lightning” when the aortic valves are obstructed?

So far, therefore, as the subversion of the author's theory is concerned, it is a work of supererogation to proceed; but as the subject involves many highly interesting points, the consideration of which may ultimately tend to the development of the truth, we prosecute it; and we have now to state that the author's premises, deduced from his experiments, are erroneous. For it will presently appear, on the authority of those same experiments, repeated by ourselves and performed time out of mind by the old physiologists, that it is the auricular systole which takes place “quick as lightning,” (to use, without approving of the phrase,) and the ventricular which is slow,—the direct converse of the author's positions.

His first experiment was on a rabbit, and previous to operating, the stethoscope was applied. “Both sounds of the heart,” says the writer, (the *long* and *short* sounds,) could be distinctly heard.” The heart of a rabbit makes 200 pulsations, and yields 400 sounds in a minute; which sounds we also could distinctly hear; but we request our reader to take out his watch, to beat in equal rhythm with two fingers on the table at the rate of 400 per minute, which he may accomplish by counting every fourth beat, and then to judge for himself whether it be possible to distinguish sounds so brief and rapid into long and short, with a pause after every second. We freely confess that our

own perceptive faculties, and those of our associates, were not sufficiently acute for the purpose; and we therefore think that inferences respecting rhythm and synchronism could not legitimately be deduced from such an experiment. Yet the author says,—

“The stethoscope was now (viz. after the heart had been exposed to view) placed on the left side of the sternum, and while one of us listened to the sounds of the heart’s action, and tapped with his finger at each impulse and dull sound, the others marked by the sight the contractions of the heart. The tap indicating the impulse and dull sound, came after each pause, and synchronous with the contractions of the auricles, the ventricles being at the same instant dilated and propelled forward, the appendices of the auricles at the same time retreating”!

But, in a sentence immediately preceding, the author says, “it is impossible to describe the rapidity with which the contraction of the ventricle followed that of the auricle. When the heart was beating violently, the succession was so rapid that the eye could scarcely distinguish between the two contractions.” Yet we are now told that the auricular and ventricular contractions and the pause were so distinctly discernible, that the synchronism of the tap with the auricular contraction was unequivocally ascertained! Independent of the inconsistency of these two passages, we must either suppose that his observations are inaccurate, or that he is possessed of a perceptive acumen to which we have not a shadow of pretension. As in our opinion it is impossible to avoid fallacies when the heart pulsates at the rate of 200 per minute, we retarded the circulation of the rabbits which we examined by depriving them of sensibility previous to the operation. Each pulsation was thus resolved into several distinct and successive motions, which it is philosophical to regard as an analysis of the more rapid natural action. Under these circumstances we found the auricle to contract first—not slowly, as Dr. C. maintains, but with a motion so *rapid* as to be almost instantaneous; the moment the fluid reached the ventricle the latter was seen to start up, evidently by the contraction of its fibres on the fluid which it contained, and not by passive distension. This was more fully proved at a

later period of the experiment, when the action of the heart was from time to time suspended, and the ventricle lay quiescent, though partially *distended with blood*; for the auricle then often made two or three contractions, which had no stimulant effect on the ventricle, while a fourth, not more violent than the former, and therefore not injecting more fluid, caused it to spring up in the manner already described. Simultaneously with the springing up, commenced the retraction of the apex towards the base, by which motion the apex was thrown forward, apparently in consequence of the long axis of the heart assuming a more horizontal position. These actions constituted only the commencement of the ventricular systole: its progress was marked by a further retraction of the apex and an approximation of the sides; while the whole ventricle was elevated further forward, and its long axis rendered still more horizontal, by the auricular distention, which advanced to its maximum in the same progression as the ventricle contracted to its minimum. The whole ventricular systole, therefore, was indubitably a slow movement, and not “quick as lightning,” as strangely supposed by Dr. C.

We shall point out the fallacy which deceived him after we have examined his *experimentum crucis*—the action of the heart in the frog. This he ushers in by strictures on the observations of Dr. Bostock, founded, we conceive, on a misconception of Dr. B.’s meaning.

“Doctor Bostock, describing the motion of the heart in a cold blooded animal, uses the following words:—‘For a short space of time the heart lies at rest, and suffers itself to be distended with blood, then it is suddenly seen to rise up on its basis, to shorten its fibres, and to expel its contents.’” On this Dr. C. remarks—“We may observe first, that there is in this description a contradiction both to his own assertions in another part of his work, and a refutation of his theory of the heart’s impulse. Doctor Bostock makes in this description the rising up of the heart anterior to the contraction of the ventricles.”

Surely not; Dr. B. means simply that these two actions and the expulsion of the contents commence simultaneously. The ventricle suddenly rises up on its basis, because its fibres contract on the contents; and that rising is, therefore,

the commencement of the expulsion of those contents.

The other passage of Dr. Bostock is this—"I may without impropriety assert that the beating is felt not at the instant when the ventricle begins to contract, but when the contraction has produced its effect in filling the arch of the aorta."

Were Dr. Bostock's theory true, "that the injection of the aorta occasions the impulse," his assertion would be rigidly accurate. For the commencement of the ventricular contraction must, mathematically, precede the effect on the arch of the aorta, and this effect again must precede the impulse; yet for the reasons assigned in the early part of this paper, these three actions, really consecutive, are not appreciably so to our senses—they appear simultaneous. Consequently the beating described in the latter quotation is not, as Dr. C. supposes, incompatible in point of time with the beating implied in the former passage, according to our interpretation of Dr. B.'s meaning.

We proceed to the author's description of the action of the heart in the frog.

"The heart did not suffer itself to be distended with blood, as Dr. Bostock states. The blood was thrown into it by the auricle contracting with great energy. It did not rise up on its basis, but was dilated and driven downwards and forwards by the blood expelled from the auricle: and finally, as the ventricle contracted, the heart retired from the surface, being deepest in the chest, at the moment when the contraction was at its utmost."

We do not wonder that Dr. C. drew false inferences from these appearances; for we repeated the experiment in the presence of eight physicians and surgeons, and after a deliberate examination, six left the room satisfied that Dr. C. had assigned the right cause for the impulse. On accidentally examining the posterior aspect of the heart, however, when its action was reduced to 15 or 20 per minute, the fallacy became obvious, and the same individuals, being recalled, at once recanted their former opinion. The whole of the auricle, which had previously been concealed by the ventricle, being now exposed to view, it was found that "for a short space of time the ventricle lay at rest\*," par-

tially distended with blood; the auricle then contracted with a smart brief motion—but only partially contracted, for the sinus venosus was constantly full of blood, both in this experiment and in the rabbit, and whether the circulation was quick or slow—when it had relaxed again and not till then, the ventricle (stimulated by the motion, we conjecture, for it was certainly not by distention) "was suddenly seen to rise up on its basis, to shorten its fibres, and to expel its contents," which latter action was *slowly* performed. After the completion of the systole, which was indicated by the pale colour, the diastole took place, and allowed a partial influx of blood, denoted by the return of the red colour; and in this state the ventricle remained for a short space quiescent, until again stimulated by the auricular contraction. It may be objected to this account, that as the action of the heart was preternaturally slow, the motions were anormal. We believe that we could discern the same series of actions when the pulsations were 40 per minute; but as we are unwilling to make assertions, we appeal to the concurrent observations of others. Dr. Turner, in an excellent paper\*, says, "so closely does the contraction of the ventricles follow that of the auricles, that it is difficult, in many cases, exactly to ascertain the termination of the one and the commencement of the other. In cold-blooded animals, in the pulsation of the heart when first formed in the embryo of the chick, and in warm-blooded animals when the action of the heart exposed to view *becomes languid, they can be observed distinct from one another*; but in warm-blooded animals, when the action of the heart is vigorous, it is difficult by the eye to distinguish any limit between the termination of the contraction of the auricle and the commencement of that of the ventricle." Again, Harvey says, "there are as if two motions at the same time—one of the auricles, the other of the ventricles themselves; nor are these performed altogether simultaneously, but the motion of the auricles occurs first, and that of the ventricle (cor, used in that sense) follows; and the motion is seen to begin with the auricles, and to proceed to the ventricles†." Afterwards

\* Trans. of the Medico-Chirurg. Soc. of Edinb. vol. iii. part i. p. 216.

† De Motu Cordis, Lugduni Batavorum, 1737, p. 31.

\* We repeat the words of Dr. Bostock, as no others can be more expressive of what we saw.



he adds, "first the auricle contracts itself, and in that contraction it throws the blood contained in it into the ventricle, which being filled, the heart starts up, instantly braces all its nerves, contracts the ventricles, and makes the pulsation by which it forthwith propels into the arteries the blood sent from the auricle\*." Haller also says, "a reason is required why first the right, and simultaneously the left auricle, are contracted, while in the meantime the ventricles rest relaxed; why, a little after, the auricles are relaxed, but the ventricles contract themselves; and then, in a third portion of time, the ventricles *repose relaxed*, but the auricles again smartly contract themselves†." This repose of the ventricle in the relaxed state is not seen unless the action of the heart be slow. We found that during this condition the cavity is partially filled with blood; a circumstance to which we here call the attention, as we shall have occasion to revert to it in a future paper.

From all that has been said, it will now be manifest that the error of Dr. C. resides in his having mistaken the commencement of the ventricular systole for the end of the auricular, and the conclusion of the ventricular for the whole of it. Hence he supposed the auricular systole to be *long*, and the ventricular *short*, the physical absurdity of which we have already attempted to show.

Finally, we dissent from the author in considering the examination of the heart of the frog as conclusive. The organ is only single, and we are indebted to one of our coadjutors for the suggestion, that the auricle is much larger than the ventricle, and the latter much thinner in proportion to the auricle than in larger animals; consequently it is distended to a greater degree, and this distention is more dependent on the auricular systole, than in the human species, to which all our investigations ultimately refer.

We now subjoin the author's conclusions, to which we annex our own in brackets:—

- |                                        |                                                           |
|----------------------------------------|-----------------------------------------------------------|
| 1. The auricle contracts               | } [Known to<br>Haller,<br>Harvey,<br>Lancisi,<br>&c. &c.] |
| 2. The ventricles second.              |                                                           |
| 3. Then the pause or state<br>of rest. |                                                           |

4. The contraction of the ventricles is rapid, and follows quick as can be conceived after that of the auricles. [It is *prolonged*, but it commences suddenly and "follows quick," &c.]
5. The contraction of the auricle is comparatively slow. [Is extremely smart and brief, and is only partial, the sinus venosus being constantly full.]
6. The heart strikes the side, or gives its impulse when the auricles contract. [When the ventricles contract.]
7. The heart retires from the side when the ventricles contract. [Dilate.]
8. The beat of the heart is produced, not by a tilting up of the point of the organ, as hitherto described, but by its swelling and coming against the ribs, in consequence of the impulse given by the rush of blood from the auricle. [Not by the rush of blood from the auricles, but by the contractile nissus of the ventricle itself upon this blood, assisted by the simultaneous distention of the auricles beneath. The mechanism of this motion we shall attempt to develop on a future occasion.]

## HYSTERIA.

*To the Editor of the London Medical Gazette.*

SIR,

"QU'EST ce que l'hysterie? quel en est le siège? quelle en est la nature?"—language used by the authors of "Nouveaux Elémens de Pathologie," in the introduction of this subject, plainly intimating that our transmarine fellow-labourers, like ourselves, have hitherto been living, as it were, under a cloud with respect to the definite and scientific knowledge of this disease. Our old handmaid, sympathy, so ready at every beck to point out "short cuts" to the goal of pathological investigation, has frequently misled the traveller, and "the longest way round" has often proved at last to be the "shortest" and the surest path to pursue. What errors and perplexities have been entailed on hysteria in consequence of resting content with the assumption of an imaginary principle, for the production of its

\* Ibid. p. 498.

† Ibid. p. 37.

mazy phenomena, instead of searching out their haunts and "local habitations," and so giving the disease something like a tangible nature! Uterine sympathy, smooth-tongued as the term may be, and reasonable as it may appear, is, however, mistrusted. Many think that, much as truly may be imputed to the uterus as the mainspring and fountain-head of hysteria, it behoves us to look farther—to more remote parts of the system, for the seat of those various evils that concur in making up the sum total of the affection. M. Georget, a physician who has reaped the benefit of a large field of observation at the Salpêtrière at Paris, is of opinion that the encephalon partakes largely of the morbid action. In our own country the spinal cord has recently been made to bear its part in the blame. Whoever has read the little book of Mr. Tate, must, I think, at least give the author credit for his original views; a conviction of their accuracy and truth must be the product of our own observations. If they be proved to be correct and well-founded, we must be indebted to him for the light which he has thrown on the subject, as clear and precise notions will lead to increase of self-confidence in the treatment of our patients. The statements are certainly curious and deserving of attention. Since the perusal of his book I have had opportunities of putting his principles to the test, and which, as far as they go, corroborate his experience.

The following case, which I have selected among sundry others of hysteria in its various types, I will take the liberty of narrating.

M. K. æt. 23, a short, pale-featured woman, married, at this time suckling an infant nearly three months old, applied for advice under these circumstances.

On the 23d of June she experienced pain in the head, throat, shoulders, *left breast*, and loins. She soon became stiff-necked, and the motion of the jaw impaired; the bowels confined; she is subject to hysteric fits; menstruation generally painful.

27th.—The muscles of the neck and jaws are rigid; not able to open the mouth wider than will admit the thin end of a spoon; saliva dribbling; voice inarticulate; deglutition painful; the neck externally highly sensible to the touch; pain in the forehead and loins;

the brow contracted, indicative of suffering; irritability of manner; skin cool; pulse 120, small; mouth dry; appetite good; bowels open this morning; stools dark.

On examination of the spine, *tenderness between the shoulders*.

R Calomel, gr. j. P. Jalapæ gr. v. f. p. mitte iv. j. 4tis. h. s.

Unguent. Ant. Tart. illinatur ter die reg. dors. spin. inter scap.

28th, 29th, 30th.—Jaw firmly closed the last two days.

July 1st.—The ointment brought out a pustulous eruption about thirty hours after the first application; within twelve hours more this was followed by great relief. To-day the jaw is unlocked; speech intelligible. Yesterday it was firmly locked; not a word could be understood. Feels much better; bowels open.

Repr. Unguent. nocte maneque.

3d.—Mobility of the jaw quite restored; only complains of a little remaining tenderness about the neck, and some pain in the head.

Mist. Cath. om. mane.

Thus the complaint lasted ten days, two of which the jaw was immoveably fixed; relaxation was speedily produced by the counter-irritation.

This was a decided case of hysteria. The patient has suffered two similar attacks before, making altogether three in three successive years. The first came on directly after parturition: it continued a week; the jaw was partially locked. The second came on when she was neither pregnant nor suckling: it lasted five weeks, ten days of which time the jaw was firmly locked, so that she could not get "a crumb into her mouth." She was bled for the first, repeatedly blistered for the second, and took sundry doses of calomel, opium, and jalap; and at last the irritation subsided,—most likely voluntarily. After the birth of her present child she laboured under an attack very like peritonitis, but was nothing but hysteria under that form.

This is trismus, idiopathic trismus. On referring to cases of this nature in the different records, I think we find the greatest proportion of spontaneous tetanus to occur in females. In many of these the hysteric disposition is very evident; in others, of premature age,

this feature is not so plain; but hysteria will sometimes impress its peculiar susceptibilities on the system long before the catamenia appear. I believe that cases of idiopathic tetanus, or trismus in the male, are comparatively very rare. The constipation so often observed in hysteria and tetanus, and by some regarded as an excitant of those diseases, I think may be looked on more in the light of an effect than a cause—depending on spinal irritation.

It is curious that hysteria clothes herself in the garb of so many diseases. Is this a wild vagary of nature, or is there some fixed principle at the bottom of it all? It may hereafter be found that hysteria, tetanus, and even hydrophobia, which occasionally bear mutual resemblances, not only agree in casual likeness, but are impressed with the determinate stamp of consanguinity. It may be discovered that, dissimilar and remote as the exciting causes of these diseases are, the essential and immediate reside in the same, though probably in different parts of the same organ—the spinal cord.

T. N. SMART.

Cranborne, Dorset, July 7, 1830.

## HYDROPHOBIA.

*To the Editor of the London Medical Gazette.*

George-Street, Hanover-Square,  
July 26, 1830.

SIR,

I ENCLOSE you some interesting documents relative to an epidemic rabies canina which prevailed in Stockholm in the year 1824. The account was drawn up, at my request, by my intelligent friend Dr. Ekstrom, who has lately visited this country. Some of the facts are of so much practical importance that I have no doubt you will deem them worthy of a place in your valuable journal. I take the liberty of particularly directing your attention, in the first place, to the method of treatment pursued—namely, the free scarification of the wound, followed by the application of the actual cautery, or some powerful caustic, and the maintaining the wound for a considerable time in a state of suppuration—a circumstance on which the doctor dwells much. Next

to the well-marked inflammatory action which took place in the cicatrix of the original wound, extending up the absorbents of the limb, after a lapse of nearly a year and a half; a circumstance which favours the opinion that the poison is not received into the system until a short time before the symptoms of hydrophobia become manifest, and which would encourage us in resorting to the free removal of the bitten parts, even after a considerable lapse of time. In further corroboration of this, I may mention that, in two instances of hydrophobia which I have witnessed, tenderness and inflammation of the cicatrix immediately preceded the invasion of the disease. Dr. E.'s speculations relative to a portion of the poison being detained in the original wound, in consequence of the condensation of the cellular membrane, is ingenious, and deserves consideration.

I am, sir,

Your obedient servant,

HENRY EARLE.

*Rabies Epidemic at Stockholm, in 1824.* By DR. EKSTROM, Surgeon to the King of Sweden, and to the Royal Hospital, Stockholm.

In the spring and summer of 1824, hydrophobia was epidemic in Stockholm and the surrounding parts of the country. A considerable number of rabid dogs, some cats, and even some horses, were treated at the Veterinary College. One hundred and six persons presented themselves at the Royal Hospital, with wounds received from the bites of animals which were rabid, or supposed to be so. The danger of such injury having been made known to the public by several advertisements from the medical authorities, almost all who were bitten applied as soon afterwards as possible. The treatment adopted consisted in making deep incisions in the wound and surrounding parts, in different directions; these were then diligently washed for several minutes either with water, or with diluted muriatic acid, or a solution of muriate of lime: the wound being thoroughly cleansed, was then dried, and any remaining blood removed, after which a hot iron, or potassa fusa, or in a few instances strong muriatic acid, was applied, always taking care to touch every point of the bottom of the wound and incisions, so that a large and deep eschar was formed.



For the purpose just mentioned, I always used small cauterising irons, in order to be able to apply them accurately to the wound itself, because with a larger iron a merely superficial eschar is produced, which covers over and conceals the wound, while the bottom of it remains untouched. For the same reason I prefer the caustic in powder, or in a deliquescent state. The muriatic acid does not produce so deep an eschar, and is therefore less trust-worthy. After this primary treatment, warm poultices were applied, to promote suppuration and the separation of the eschar. The suppurating surface which followed was kept open for several weeks—or even for months, by means of the unguent cantharidis, &c. The patients were all ordered to shew themselves at the hospital every second day, and were thus carefully watched, as well in respect to the state of the wounds, as of their general health.

The efficacy of the treatment was strongly illustrated in the case of a young man, who was bitten at the same time with ten other persons by a rabid dog: they immediately applied for assistance, and all escaped; but he, regarding the wound as too trifling, did not pay any attention to it, and at the end of three weeks he was seized with hydrophobia, on which he was brought to the hospital. I cut out the cicatrix of the primary wound (which, however, was so small, that it could scarcely be found), and applied the actual cautery to the part. Large quantities of blood were taken from him, and the mercurial ointment rubbed in nearly over the whole body. Injections of water, recommended by Magendie, were also employed; but nothing diminished the violence of the symptoms, and he died about seventy hours after the development of the disease. He bit the nurse in the hand when wiping his mouth: the hot iron was applied immediately after scarifying the part, and the woman suffered no farther inconvenience. When I made the injections of water into the veins, he spit upon my face, and even into my eyes. The same thing happened to the house-surgeon, when bleeding him. We only washed the parts with tepid water, and syringed our eyes with the same fluid.

Of the entire number above mentioned as having applied at the Royal Hospital on being bitten, one only af-

terwards suffered from the disease. With respect to him the circumstances were as follow:—A man about 40 years of age was bitten by a rabid dog, along with several other persons, all of whom immediately applied for assistance: being an artist in a porcelain manufactory out of the town, and unwilling to lose his day's work, he deferred his visit to the hospital till next morning. He had a wound in the hand, which was rather superficial; and one in the leg, just above the ankle, and passing deep behind the tendo-achilles: both were scarified, and filled with caustic potass. The man suffered much from his leg, and I wished him to stay in the hospital; but, in fact, partly from being at a distance, and partly from unwillingness to lose his occupation, he came seldom, neglected our orders, and allowed the wound to heal up quickly, instead of keeping it open. About a year and a half after this time he was fishing on a Sunday morning, and as he stood in the water, close on the beach, with his feet bare, he suddenly cried out to his companions, "I can bear this no longer." He then ran home as fast as he could, and complained to his wife, with horror, of the effect of the sea upon him, which, he said, brought on dreadful suffering, particularly an oppression in the chest. His breathing was rapid, he spoke in a hurried manner, was agitated, and even wept, exclaiming that he should die. At this time he could drink, though not without difficulty, but was greatly disturbed by the least breath of air—even by that caused by opening the door. Next day he was delirious, when his wife applied to the physician of the manufactory, who, suspecting hydrophobia, requested me to see the patient with him. I found the cicatrix on the leg inflamed, the absorbents of the limb and the glands in the groin somewhat swollen and tender. When I entered the room he recognized me, and, reminding me of the dog, cried out, "My God! now I have found it." The cicatrix was cut out by a very deep incision, and after allowing the wound to bleed freely the hot iron was applied. Mercury and other remedies were employed, but he died in three days, under a paroxysm of convulsions. He could drink to the last, and never made any attempt to bite, but was constantly spitting. The only remarkable appearance found on inspecting the body, was the

inflammation of the absorbents already mentioned, and a considerable effusion of serum within the head.

The sum of my experience relating to hydrophobia is, that the local primary treatment calculated to eliminate or destroy the poison as soon as possible, and before its absorption, is the principal and probably the only thing to be relied upon; but as it is impossible to determine, *à priori*, how long after the accident the absorption may take place, the method above described would be applicable at any period after the receipt of the injury;—but the case just detailed, shews the danger of even a short delay. I am satisfied that in this case had there been no local treatment employed, the disease would have broken out in the space of a few weeks, and that what was done, though not sufficiently energetic to destroy the poison altogether, yet postponed its effects. The eschar and effusion, with thickening of the cellular membrane which were produced by the cautery, prevented for some time the absorption of the small portion of poison still sticking within the limits of the cicatrix; but as these effects became diminished, and the parts resumed their original texture, the natural actions were renewed, absorption took place, and the disease then broke out.

It may perhaps be said that, of those treated by me, but few were bitten by dogs really rabid. I know, however, with certainty, that on a very moderate computation half were so—the dogs having been secured for the purpose of determining this point. In further support of the efficacy of the plan of treatment recommended, I may refer to the following case. A gentleman who was sporting one morning, observed that one of his dogs would not pursue the hare, but attacked and bit another dog. In order to secure him, the gentleman proceeded to put a collar on the assailant, when the animal bit him in the hand. He returned to town, and came to me about six hours after the accident, when I employed my usual treatment, as above described. The dog that had wounded him died hydrophobic in two days; the other dog, bitten by the first, took the disease in three weeks, and also died. The gentleman, however, has suffered nothing, though he is a very nervous person and had the greatest apprehension of danger, and thus remained in a state of mind the best

calculated to increase the disposition to the disease. During this summer one soldier died of hydrophobia in the Military Hospital of Stockholm; one artillery man died in the town, and a labourer in a village in the neighbourhood. Of these, which were the only deaths, none of the individuals had submitted to the primary local treatment which it has been my object to recommend.

London, 20th July, 1830.

## FATAL DISEASES OF LONDON.

*To the Editor of the London Medical Gazette.*

SIR,

STATISTICAL writers have long, and truly with great reason, complained of the loose mode in which the bills of mortality are drawn up; but the march of intellect has now reached the worshipping society of parish clerks, and their weekly reports (though still susceptible of improvement) are well drawn up, and, at any rate, are no longer defaced by such uncouth phraseology as *headmould shot*, *livergrown*, *rising of the lights*, &c. So great is the improvement, indeed, perceptible in the reports of the last year, that I have thought it worth while to prepare, for my own private study, a classified arrangement of them; and this is much at your service, if you think it likely to be useful and adapted to the pages of the *London Medical Gazette*.

I have commenced with the diseases of infancy and childhood. Then follow those which may be presumed to have occurred in the middle periods of life. Those of advanced age complete the catalogue.

A table of this kind suggests different thoughts to different minds. Allow me to conclude by noticing a few of those which have occurred to me while engaged in preparing it.

We perceive the mortality by consumption still predominating immeasurably over all others “in the painful family of death.” It approaches nearly to one-fourth of the total mortality, thus corroborating the estimate of Dr. Woolcombe. We find *convulsions* to be the next most fatal form of human malady, and this is doubtless the principal source of death in children under two years of age. Small-pox is still to be seen at the head of the mortal exanthemata, though happily stripped of

much of its malignity. Prior to the discovery of vaccination, the deaths by small-pox seldom fell short of 2000, and not unfrequently rose to 3000. They are now reduced below 800.

Hydrocephalus, small-pox, and measles, have, for some years past, sustained pretty nearly the same average rate of mortality. We may consider them as the great scourges of the second period of life (between two years of age and ten).

Affections of the heart appear from this table to be much more common than formerly, and the notion is, I believe, sanctioned by the experience of our best physicians. The hypertrophied heart is avowedly the most common form of fatal affection, and its diagnosis would appear to be sufficiently ascertained.

The proportion of deaths by child-birth varies less than any other source of mortality which the table presents. It has remained at about 260 during the whole of the last century.

Considering the great alarm of the public mind with regard to hydrophobia, it is certainly singular that only four deaths should be recorded as having taken place by that disease in 1829. Five deaths are placed to the account of *grief*, and when one considers what London is, the surprise can only be, that the number is so small.

Nothing astonishes me more, in perusing the bills of mortality, than the pertinacity with which the column of *casualties* maintains its annual average (350.) That the same number of persons should annually die of consumption or of cancer one can easily understand, but that the same number should annually be burnt, choked, drowned, overlaid, poisoned, scalded, strangled, and suffocated, is beyond my comprehension. Such, however, is the fact.

The following is a summary of the respective ages at which the several deaths, in 1829, took place:—

Under 2 years of age .....	6710
Between 2 and 10 .. .....	3366
—— 10 and 50 .. .....	6506
—— 50 and 103 .. .....	6942

Total Mortality of 1829..... 23,524

I have the honour to be, sir,

Your very obedient humble servant,  
GEORGE GREGORY.

31, Weymouth-Street, Portland-Place,  
July 24, 1830.

DEATHS within the BILLS OF MORTALITY between Dec. 12, 1828, and Dec. 15, 1829.

Stillborn ..... 933

*Diseases of Infancy and Childhood—*

Convulsions .....	2761
Hydrocephalus .....	855
Whooping-cough .....	633
Teething .....	541
Croup .....	123
Worms .....	7
—	4920

*Exanthemata—*

Small-Pox .....	736
Measles .....	578
Erysipelas .....	42
Aphtha .....	82
Cynanche (probably maligna) ..	28
Other Eruptive Disorders...	28
—	1494

*Idiopathic Fevers—*

Fever .....	1167
—— Typhus .....	103
—— Intermittent .....	53
—	1323

*Hæmorrhage* .. ..... 38

*Consumption* .. ..... 5251

*Inflammation* (chiefly, as I believe, thoracic, including pleurisy, &c) 2406

*Gout and Rheumatism* .. ..... 78

*Affections of the Heart—*

Contraction .. .....	9
Enlargement .. .....	40
Ossification .. .....	16
Palpitation .. .....	7
—	72

*Spasm*..... 51

*Affections of the Liver—*

Inflammation.....	197
Jaundice .....	32
Bile .....	11
—	240

*Complaints of the Bowels—*

Diarrhœa and Dysentery...	41
Stoppage of the Stomach (Ileus?).....	24
Fistula .....	7
Hernia .....	26
—	98

*Diseases of Pregnancy—*

Miscarriage .....	8
Child-birth .....	264
—	272

*Urinary Disorders—*

Stone in the Bladder .....	19
Stricture.....	4
Diabetes .....	3
—	26

*Cancer* .. ..... 94

*Scrofulous Complaints—*

Scrofula .....	6
Abscess .....	124
Tumor .....	16
—	146



<i>Venereal</i> .....	11
<i>Hydrophobia</i> ..	4
<i>Tetanus</i> .....	2
<i>Grief</i> .....	5
<i>Sudden Deaths</i> —	
From internal causes .....	126
From accidents (including 3 executed) .....	355
	481
<i>Complaints of the Head</i> —	
Apoplexy .....	429
Palsy .....	203
Epilepsy .....	67
Insanity .....	258
	957
<i>Dropsy</i> —	
Anasarca .....	1021
Hydrothorax .....	106
	1127
<i>Diseases of Advanced Life</i> —	
Mortification .....	286
Asthma .....	1131
Old Age and Debility .....	2078
	3495
	23,524

## ANALYSES OF BRITISH MEDICAL JOURNALS.

### EDINBURGH MEDICAL AND SURGICAL JOURNAL.

July 1, 1830.

WE have for some time been in the habit of noticing the most important papers in our northern contemporary, which has long occupied a prominent place among the medical periodicals of the day—more especially on account of the number and value of its original communications. On the present occasion we find ourselves obliged to pass by most of the articles, by something in their nature rendering them unsuited either for extraction or analysis. Thus we have a Quarterly Report by Mr. Symes, from his Surgical Hospital, consisting almost entirely of detached and unconnected cases;—a long paper on the Stethoscope, by Dr. J. C. Gregory, which, amid a somewhat greater display of learning than is apparently necessary, contains a good digest of what is known, but scarcely any thing having a claim to novelty;—this is followed by an Essay on the efficacy of Mercurial Purgatives, by Dr. Harty, of which we should have spoken more at length, but that it is not concluded in the present number;—an Answer, by Dr. Goodwyn,

to certain objections against his opinions adduced by Bichat, and which, our readers will probably agree with us in thinking, comes rather late, as both parties are in their graves;—cases of Hare-lip, by Mr. Dewar, judiciously treated in the ordinary way;—a Report, by Dr. Corrigan, on the Diseases of Dublin, to which the same objection applies as to the paper of Mr. Symes. This brings us to some

### *Observations on Acupuncture*, by Dr. RENTON,

From which we extract some interesting facts:—

“My attention was first directed to the use of acupuncture in an inveterate case of chronic sciatica, under which Sir Thomas G. Carmichael, Bart. long laboured, and which had resisted the usual routine of practice—galvanism, leeches, blisters, pitch plaster, and all the ordinary local applications in the form of warm baths, stimulating liniments, and lotions, as opodeldoc, tincture of cantharides, essence of mustard, cajeputa oil, &c. Tar pill, a course of sulphate of quinine, blisters to strengthen the constitution, the wearing of flannel and shamoy, and friction of the parts, were also attended with unsuccessful effects. The disease was of several years standing, but the paroxysms were, according to accidental causes of aggravation, of shorter or longer duration, and attended with pain of greater or less violence. The pain extended along the course of the sciatic nerve, and after a day of more than usual exercise from walking, or even riding upon horseback, was extremely severe. Transitions in the state of the weather brought on also violent attacks of the disease. At other times, without any apparent cause, he could not walk without experiencing very much uneasiness from stiffness in the muscles of the right thigh and leg; and when that feeling went off by gentle exercise, it was succeeded by a more disagreeable sensation of numbness, want of power, and a sense of weariness in the affected parts. The pain of late was almost always constant in the hip-joint to a greater or less degree, and in the gastrocnemius muscles, so that he could not sit for any length of time without having occasion to rub the calf of the leg, to relieve the uneasy feeling in it—a feeling he compared to something gnawing the bone. Though he

was not entirely confined to the house, he was able to take but little exercise, and was so lame as to be obliged in a great measure to give up shooting. Suffering so much, he was anxious to try any thing for the removal of the disease.

"As a last resource, I recommended him to try puncturing the parts with needles. I told him of two or three remarkable cures which I had heard were performed by these means in Dumfriesshire—a district of country where I believe the practice has long been known; but when I mentioned that the operation of introducing the needles was unaccompanied with pain, he was disposed (as many others are) to treat the whole affair with much more scepticism than confidence. In the course of the afternoon he was induced, by the example of a gentleman who first performed the operation upon himself, to insert two or three common needles in the calf of his leg, and was surprised to find both that the insertion occasioned no pain, and that the pain in the leg, after the needles had not remained longer than a minute, *was entirely removed*. By introducing two or three more needles into the thigh, he completely regained the use of his limb, and was able to walk into the dining-room shortly afterwards without pain or uneasiness. When I called in the evening, I found him completely cured by the needles of the disease with which I left him affected in the morning, and since that time more than eighteen months have elapsed, and he has been able to take every kind of exercise without experiencing any return of the affection. The needles were in a high state of oxidation. So far, therefore, the cure was both *instantly*, and appears to be *permanently* established.

"From the successful issue of this case, I resolved to take the first favourable opportunity that occurred to me, of again trying acupuncture, and I had occasion to do so shortly afterwards upon a farmer who was affected with a most violent paroxysm of sciatica. He was a great martyr to chronic rheumatism, and had brought on the attack of sciatica he laboured under when I saw him, in consequence of being exposed to damp and cold, when fishing about three weeks before. He was for eight days confined to the house, and with great difficulty could move from one

room to another from pain which, extending from the right acetabulum to the tendo Achillis, deprived him of the power of bending the hip and knee-joints. In consequence of this, he was very much bent to the diseased side, and from the weakness and pain in the affected limb, he could not bear the weight of his body upon it without the help of a crutch, so that his moving forward was effected more by a sort of lateral halt than a walk. On examination, I found no swelling; but considerable pain was experienced upon pressure in different parts, and these I fixed upon as the most appropriate places for introducing the needles. After some hesitation he consented to the operation, but with little faith in its utility, and with still less reliance upon my assurance that it was not to be a painful one.

"Not having my case of needles with me, I used half-a-dozen common ones of different sizes. Three of these, I put into the middle of the *soleus* fully an inch and a half, and allowed them to remain three minutes. I perceived that they were very much shaken by the contractions of the muscle, which held them so firmly as to require a sharp pull to extract them. He felt no pain when I inserted them, and only a little when I took them out. He was almost instantly relieved of the pain in the calf of the leg, and was quite astonished that he could move his leg without feeling any uneasiness. I found no difficulty in persuading him to allow me to extend the benefit of the operation to the thigh, where I introduced three other needles, more than an inch and a half deep into the middle of the *vastus externus*. They remained about five minutes, during which time I observed the muscle, from the motions of the needles, was affected with violent contractions. The operation acted like a spell, for immediately after it he walked perfectly erect and without pain. I remained with him an hour or two, and upon my departure he accompanied me to the offices, which are at a little distance from his house, without feeling any weakness or difficulty in walking. More than a year has elapsed, and he has not had any relapse of the complaint.

"The second case in which I employed acupuncture was that of a young woman, who was suddenly seized when at

work in the field with pain in the hip-joint, extending to the middle of the leg, to so violent a degree that she fell down, and was carried home. I was sent for, and saw her in the course of three hours. She was lying in bed upon her face, in the same position in which she had been first placed, being unable to move her body in the least degree; and she was screaming with pain. She was perspiring profusely, but no fever was indicated by the state of her pulse. She received no injury upon the part to account for the pain, the attack being equally violent as it was unexpected. Without mentioning what I intended doing for her relief, I introduced five needles about two inches into the *glutæi* muscles, two into the *vastus externus*, and, at the same time, three others not so deeply into the back part of the leg, the parts she complained of most severely. I allowed them to remain five minutes, and took them out without her being aware of what I had done. After the operation she felt immediately great relief, and was able to turn herself in bed. I gave a strong purgative draught, and my assistant, Mr. Henderson, upon calling next morning, found her continuing well, when at rest, but still affected with pain when she moved the hip-joint. He therefore introduced six needles, which mitigated the pain as much as the first operation did, but they did not wholly remove it at the time. In the course of the day, however, it went off altogether, and she resumed her work next morning.

"Three months have elapsed, and she has never had any return of the complaint. Though the removal of pain was not at first so wholly effected as in the two former cases, the relief obtained was obtained as quickly and as permanently. This case supplies one important fact—viz. that the removal of the pain could not be attributed to any impression acting through the medium of the imagination in the way of hope or fear contributing in the cure, as the woman neither saw nor knew the nature of the operation performed upon her.

"The utility of acupuncture was very evident in this case, for had the usual means been employed, as leeches and the warm-bath, I have no hesitation in saying that the woman's sufferings would not have been so readily and quickly alleviated as they were, since the application of hot fomentations to

the parts, continued for two hours before I used the needles, had not the slightest effect in mitigating the pain.

"A weaver in this village had been affected for nine months with rheumatism to a greater or less degree in the right arm. The disease was almost wholly confined to the deltoid muscle, and was attended with so much pain and want of power in moving the arm, as in a great measure to disable him from working. Six two-inch needles were introduced into the affected part, and allowed to remain five minutes. The poor man was *immediately* relieved of pain, and regained the use of the arm. He has been at his usual employment for these last five weeks, and has had no return of the complaint.

"I was myself cured of a similar affection in the left deltoid, which, for two days, gave me very great pain when I endeavoured to extend or raise the arm, so much so, indeed, that I could with difficulty put on my coat, or assist myself in eating with the left hand. The introduction into the muscle of four needles for three minutes, at once completely removed the affection. The needles were agitated, I observed, by the contractions of the deltoid, and were in a state of considerable oxidation. The only disagreeable, for it was not a painful feeling, I experienced after the needles had remained three minutes, was a sensation of numbness, which extended along the arm to the fingers.

"A gentleman had suffered very much for upwards of a year from a painful affection of the *supinator radii longus*. He had fomented, leached, blistered, and rubbed all sorts of stimulating embrocations, and wore flannel upon the parts, without experiencing any relief. Two or three needles, introduced into different parts of the muscle, instantly relieved the pain he felt when he rotated the hand, and laid hold of any object. He shook hands with me immediately after the operation without feeling any kind of hindrance or uneasiness; and more than two months have elapsed without his having had any return of the complaint. I observed the contractile power of the muscle was very much called into action by the needles, and that the needles were in a high state of oxidation.

"I might add several more cases to prove the utility of acupuncture in rheumatism if it were necessary, but I



shall defer doing so till some future opportunity. I shall merely remark, that its effect in removing the pain of lumbago, I have found to be nearly as great as in the preceding cases; and such indeed might have been expected from the similarity of the complaints. I have also tried it in a bad case of hip-disease, not in the hope of effecting any thing like a removal of the disease, but with the intention of mitigating the violence of the pain; and in one instance, in which the girl had brought on a violent attack of pain from using the diseased limb too much, the introduction of six needles into the *glutæi* muscles removed the excruciating pains. My experience of it in bad cases of sprains and bruises, after the inflammatory stage is gone off, warrants me in saying, that the pain and weakness of the parts consequent to such injuries will be greatly benefitted by the use of needles, and that in tedious recoveries from such accidents, they afford a means of cure which ought not to be neglected."

\* \* \* \*

"When the needles have remained three minutes or upwards, a numb and prickly sensation is in most cases felt around the parts punctured, and when they have been inserted into the *glutæi* or deltoid, that sort of feeling extends along the course of the limbs to their extremities. This sensation I have found to be a favourable symptom, the removal of pain to a greater or less degree following it. I have known, however, several cures effected without it.

"The needles, after they had remained for three minutes or so, were always in a state of oxidation."

Dr. Renton's paper is followed by an account of *Two Cases of Malformation*, by Dr. Campbell. The first of these involved the heart, producing *morbus cæruleus*, in which the breath was so cold as to have attracted the notice of every one. A very small quantity of blood only was sent to the lungs, which were also unusually small. The other case displayed malformation of the head, cervical spine, diaphragm, &c.

Mr. Hodgson relates a case of *Phlegmonous Erysipelas*, successfully treated by nitrate of silver on Mr. Higginbottom's plan, but which contains nothing more than the simple fact we have stated.

A paper, by Dr. W. Sharpey, on a peculiar motion excited in fluids by the

surfaces of certain animals, terminates this part of the number. The author accidentally observed that the surface of the tadpole excited currents in the water in which it was placed, and thus led him to discover that a similar phenomenon presented itself with regard to numerous invertebrate animals. The purpose seems to be that of exposing fresh supplies of the surrounding fluid to the respiratory, and perhaps to the digestive organs; and the mechanism by which it is in some instances at least effected, consists in minute cilia ranged along the gills.

#### HOPITAL DES ENFANS.

—

*Clinical Lecture, by M. Guessent, on  
Inflammation of the Vertebral Articulations.*

THE disease which forms the subject of this lecture is accurately described, and the indications of treatment are pointed out with great judgment. As it is an affection which is often misunderstood on the first attacks, when alone the remedies can be employed with any hope of preventing a fatal termination, this short summary of the lecturer's experience will be read with interest.

In the ward St. Anne, No. 1, is a child, æt. 3½, affected with chronic phlegmasia of the articulations of the first cervical vertebrae. M. Guessent availed himself of this opportunity to give a lecture on a disease, which, he remarked, was very insidious in its progress, and its nature but little understood by the majority of medical practitioners. They generally confound it with the diseases described by Pott, with which it has no analogy. Pott's disease is seated in the body of the vertebrae, while the phlegmasia of which M. Guessent treats always commences in the articulation, advances into the cartilages, and only attacks the bones in its last stage.

The first symptom of this affection is commonly a local pain, more or less acute, accompanied with fever and difficulty of motion in the neck, and some deviation from the natural position of the head. This inclination of the head varies according to the part which is attacked by the inflammation, and appears

to be a kind of instinct which leads the child to separate as much as possible the diseased surfaces, and avoid compression on the inflamed point. Thus, if the phlegmasia is seated on the anterior part of the interstices of the vertebræ, the head is thrown back, but the child remains upright; if, on the contrary, the posterior part of the articulation be affected, the head is bent forward. Again, if the two lateral articulations be affected, the head retains its natural position, but the patient is always anxious to lie down, and when he is raised, places his hand under the chin. Finally, when only one lateral articulation is inflamed, the neck inclines to the opposite shoulder: this case may be mistaken for rheumatism of the neck; but the presence of fever, and the absence of all muscular contraction, will indicate the correct diagnosis.

The phlegmasia sometimes commences quite in front, under the anterior vertebral ligament. The diagnosis is then more difficult, the motions of the head are free, and pain is only felt when the head is depressed very low. M. Guersent cited a case where several of the most distinguished practitioners in Paris were mistaken in the nature of the morbid alteration.

Such is the disease at its commencement; but the symptoms gradually increase in violence, motion becomes more difficult and painful, and at last is entirely impeded. The slightest jar the patient experiences causes acute local pain. M. G. remarked, that in both these first stages the digestive and respiratory functions remained unaffected. Local pain, fever, cephalalgia, and sometimes tumefaction in the neck, are the only symptoms of this disease. But when the affection approaches the last stage, a host of new symptoms appear: paralysis of the extremities deprive the patient of all power of motion; the face becomes red and swelled in proportion as the consolidation of the tissues impedes the free circulation of the blood. At this stage we may often distinguish a fluctuation deep under the muscles of the neck; besides, that the emaciation and dry state of the skin evidently prove purulent deposition. Generally however, these abscesses are not numerous, and of small extent. When they are situated in front of the neck they may raise

pede deglutition, occasion a nasal tone of voice, and give rise to all the signs of polypus in the nose. In the case already alluded to this actually took place; the nose was repeatedly examined, but nothing could be discovered capable of affecting the voice. Suddenly the abscess formed between the vertebræ and pharynx burst, a great quantity of pus was evacuated by the nose, and the voice assumed its natural tone. The child was only temporarily relieved, the disease had affected the vertebræ, and the patient died shortly after.

When the phlegmasia affecting the articulations of the first vertebræ is not arrested in its progress, it terminates in three different manners. 1st, By luxation, when the inflammation has destroyed the natural connecting media. It sometimes happens that a sudden movement of the patient, made without due precaution, dislocates either the head from the atlas or the atlas on its axis, and produces instant death by compression on the spinal cord: M. Guessent has seen two examples of this accident in the hospital, and in consequence he has expressly forbidden the patient, No. 3, St. Ann's ward, to be moved. 2d, Apoplexy of the spinal cord has been observed by M. Guessent in a very robust boy, in whom the intervertebral phlegmasia had proceeded very rapidly, and was suddenly terminated by death. In the post-mortem examination a small apoplectic clot was found in the centre of the cord. 3d, The most common termination of this disease is neither of those already indicated. Death generally takes place slowly, and appears to be the consequence of pulmonary engorgement brought on by the horizontal posture and hectic fever. Nothing is more frequent than partial pneumonia in young subjects, when any lesion compels them to remain on their backs: this effect more especially takes place when the disease tends to exhaust them by diminishing the action of solids.

*Treatment.*—As soon as the physician has assured himself of the existence of the intervertebral phlegmasia, he ought to employ vigorous local treatment. It is only at the commencement of the disease that its progress can be stemmed; at a later period the most powerful means will only enable us to palliate the symptoms. We should first, then, have recourse to local blood-

letting, and persist in its employment if the patient be strong and robust; if, however, the local affection be connected with a scrofulous diathesis, we must proceed with caution. Sloughs must then be formed with the potassa fusa, and the moxa and other energetic revulsives resorted to, and their employment must be continued for a long period, even after the amelioration of the symptoms. M. Guessent here alluded to a patient that died after having very nearly recovered, from these remedies having been stopped at too early a period.

It is then, in the first period, when the inflammation has only affected the synovial membrane, that it is important to employ therapeutic agents. Later, when the cartilages are absorbed, and the bones in a state of caries, the means which art can command are useless, for the mobility of the first vertebræ effectually prevents anchylosis. M. Guessent has known no instance of cure after the disease had passed the first stage: he thinks that general treatment is of very little service in these affections: the remedies indicated by the constitution of the patients would generally be stimulants and anti-scrofulous, and it is evident that their administration would only aggravate the local irritation which always exists in these diseases.

## MEDICAL GAZETTE.

*Saturday, July 31, 1830.*

“Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso.”—CICERO.

### THE PYRAMID v. PÈRE LA CHAISE.

SEPULTURE, as at present managed within the metropolis, is an inexhaustible source of complaint. That the system must be reformed altogether, is quite certain. This is generally understood; and we have lately seen what has been proposed with this view by a Society or Joint-Stock Company now in course of formation. We thought it

our duty, when alluding to the “getting up” of this Company, to point out the weakness and inefficiency of the measures intended to be taken, and we maintained the propriety of calling the attention of the legislature, in the first instance, to the evil of which the community has such grievous reason to complain, and for which a proper remedy is required. Till this is done—till burial within the city is prohibited by law—and suitable places of interment assigned beyond the precincts of the metropolis, we repeat it, nothing is done,—waste of both time and money, with disappointment and vexation, will be the only result of such half measures, so imperfectly conceived, and so weakly proposed.

The great object of those who wish to abolish the present system, and substitute a better, is comprised in these two purposes:—To have the place of deposition irrevocably fixed without the city; and to have it sufficiently capacious to allow the mortal remains to rest undisturbed for a perpetuity. They would further have the assigned cemetery as beautiful and picturesque as possible—they would have it, in a word, an example of national taste and liberality.

Two plans have been proposed for the accomplishment of this end. One the Père la Chaise plan, on which we last week expressed ourselves in a manner perhaps not quite palatable to some readers; the other, the structure of a pyramid capacious enough and durable in all conscience, and forming, when complete, one of the most wonderful monuments that the world has ever yet seen.

With regard to the Père la Chaise project, we have little more to say: we have already expressed ourselves pretty amply on it; but we have no hesitation in repeating, that we hold it to be a very inadequate mode of meeting the public



emergency. A grave yard of 80 acres, laid out with the utmost economy of space, and though adorned with all manner of funeral finery adapted to attract and amuse the multitude, would fall far short of the wants of the city; nor would it seem, after all, to be very glorious or creditable as a national concern. Eighty acres, in the course of a few brief years, would be completely occupied—the soil should be turned up afresh—the graves should be broken up for the formation of new ones—in short, the present objectionable mode of exhumation should be again resorted to, and the old complaints of ransacking and violating the sacred depositories of the dead, would be inevitably renewed. The shifts and expedients, however, which the advocates of this plan are obliged to have recourse to in order to demonstrate its feasibility and adequacy, deserve special notice—shall we say exposure? That they deceive themselves, is pretty evident; but the public should not be the dupes of their self-deception. We cannot help expressing ourselves in this way after having looked into a pamphlet or Report recently circulated by the Company in question. Let us take, for example, a specimen of their calculation:—

“Eighty acres contain 387,200 square yards, and allowing the *usual average of 6 feet by 3 feet for each grave*, 193,600 interments might take place, which, at 3*l.* each, amounts to 580,800*l.*”

So here we have an announcement of the economical manner in which the ground is to be disposed of. It is to be studded and paved with corpses “thick as the leaves that fall in Vallombrosa.” Where are we to have the delightful walks, and pleasant shrubberies, and picturesque and imposing tombs, that are to adorn this “garden of the dead?” We thought that the *usual average* was, and could not well be less,

than 9 feet by 4½ feet for each grave. There is nothing like a little arithmetic as a test in matters of this sort. According to our account, 80 acres will just hold 86,044 bodies in coffins, *quam proxime*; and it is not a bad allowance for the space. The revenue, by-the-by, must be reduced proportionally—to much less than one half that stated by the Company. That, to be sure, is only a secondary consideration. But pack them as we may, unless we put them perpendicularly, we shall not be able to make a cemetery of 80 acres—we repeat, hold more than a number that falls *far short* of that represented in the Report. If, then, the annual interments be taken at 40,000, as the Company asserts, in little better than two years we must begin over again, *de novo*, and dig up the first plantation of mouldering relics long before we can reasonably expect the first occupants to be reduced to their primitive dust.

Many other exaggerations meet our eye as we run through this pamphlet. We have not, however, at present, time or space to give to their exposure. We will only say, in conclusion, that the silly account it contains of the grave-yard of Père la Chaise—evidently the production of some very weak-minded person, and as weakly inserted in their book by the managing committee—is only calculated to provoke laughter, if, indeed, it bring not ridicule and contempt on all the other documents with which it is accompanied.

The other plan—THE PYRAMID—is a vast and magnificent conception. Whatever conclusion we may come to with respect to its practicability, we must at least admit it to be one of the grandest projects of this projecting age. Some of our readers, we doubt not, will hardly believe it possible that it is proposed to raise a pile of brick and granite, surpassing in height and bulk,

and, as it is intended at least, exceeding in durability, those Egyptian wonders which have withstood the wreck of time, though they were ancient even in the most ancient period of which we have any record! But it is unnecessary to stand moralizing. The immediate advantages of such a structure are sufficiently striking. On the space of *eighteen* acres it is proposed to deposit, undisturbedly and without interference with each other, upwards of *five millions* of bodies! This immense mausoleum would, therefore, effect the grand, the principal object which is sought after. It would present a secure repository for the dead, while it would itself form one of the most remarkable ornaments of the country, and transmit to future ages a noble specimen of modern art.

The saving of ground which should result from the pyramid plan is well deserving of notice. The dead, as it is, are sadly encroaching on the living, and we are obliged to grudge our deceased fellow-mortals the little space that each separately fills up. The Père la Chaise Company propose economy; but all *they* could do with eighteen acres would be to stow about 20,000 bodies in it—19,360 exactly, at 9 by 4½. This, then, on the principle of protecting the mouldering remains from disturbance, necessarily induces the purchasing, inclosing, beautifying, and fitting out cemetery after cemetery, until all the champagne country round the metropolis is occupied.

A pyramid of the dimensions proposed by Mr. Willson (the author of the other design of which we speak) is, it would seem from the manner in which it has been entertained, too vast to be popularly attended to. The first objection to the pyramid lies in its vastness; the second in a natural inference from the first—its great expense. It is immediately concluded, that, to raise a pyramidal pile to the altitude of 900

feet, standing on a square base of eighteen acres, is something beyond the ordinary powers and resources even of this metropolis; that it would require ages to build it, and riches inexhaustible to bring it to an end and make it complete. To jump to such a conclusion with so much precipitancy, is not treating Mr. Willson with common candour. He is the originator of a scheme which must command our admiration; and he offers to demonstrate its practicability and economy, and its special adequacy to meet the wants of the public. Under such circumstances we should presume him to be entitled to a fair hearing. For our own part, the perusal of his printed *exposé* has convinced us that the more intelligent classes are censurable, for turning a deaf ear to his project.

We shall take an extract or two from his statement \*, though we should wish our readers to consult and peruse the whole: it will be found exceedingly interesting, even in its minor details.

“ In order to form some idea of the projected edifice, the reader is requested to imagine a massive square building, gradually diminishing to its apex, whose base occupies an area as large as Russell-Square, towering to a height considerably above that of St. Paul’s, and exhibiting on every side, to its very summit, a vast flight of stairs; the whole faced with square blocks of granite, and surmounted by a plain and appropriate obelisk. This will, perhaps, convey something of the effect that is to result from the great sepulchre, when it shall be realized. It is to be approached through a lofty Egyptian portal; within this entrance there is to be a small plain chapel, and a register office opposite, to correspond; also four neat dwellings, for the keeper, the clerk, the sexton, and the superintendent. Open arches are to be constructed against the boundary wall, for the workmen; and these to support a terrace-walk along the four sides, with four watch-towers

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\* The Pyramid: a general Metropolitan Cemetery, proposed to be erected in the vicinity of Primrose Hill. Thomas Willson, Architect. 1830.

or covered seats at the extreme angles. The entrances or avenues to the cemetery are four (north, south, east, and west), in the centre of the sides, and intersecting each other in the middle of the edifice. Here is to stand the shaft of general ventilation, having the position, and apparently the office, of a king-post to the whole structure."

"Surrounding the shaft, and also near the chief avenues, inclined planes will be constructed of gentle ascent, from stage to stage, in lieu of stairs, to facilitate interments, and for the conveyance of materials: those near the sides will be lighted from the exterior. The shaft will be chiefly used for raising coffins to the higher catacombs, and to those vaults which are in immediate proximity with it. The walls of the shaft must be radiated, and so constructed as to resist weight and pressure, being the great abutment of every pier, and of every groined arch throughout the massive edifice, serving the threefold purpose of the main buttress, the general ventilator, and the efficient vomitory, should such a provision be found necessary from impure exhalations that may pass by filtration through the walls of the numerous cells. It is also connected with every avenue and passage within the capacious womb of the sepulchre, and being open from the foundation upwards, and terminated with lifting gratings at every stage, to prevent accidents, it will thus give ready access to two stories or stages of catacombs under ground, to ninety-two stages above ground, rising to the very summit, having in the whole 215,296 catacombs, which will contain twenty-four large-sized coffins each, making a total of 5,167,104 bodies, which are to be closed up and sealed for ever when interment takes place, with stone tablets on the surface, explanatory of name, age, rank, and residence. A far greater number of subjects by millions than was ever before assembled under one roof, or upon so small a superficies of the earth; and being formed of small groined arches, with intermediate passages between the tiers, gives the section very much the appearance of a beehive, rendering the work as compact as the honeycomb, which it so nearly resembles; possessing all the properties of duration nearly equal to the primitive strata; but relieved of its ponderous gravity, it can only be affected by the convulsions incident to nature, and may therefore be said to be almost as im-

moveable and imperishable as the globe itself!"

After describing several other peculiarities of the structure, Mr. W. continues:—

"The plan thus detailed reveals to every competent judge its complete practicability. It is clearly founded on the known principles of architectural science. It must, however, be studied with attention, before a just conception can be formed of the difficulties which, as a work of art, its projector has combated and finally surmounted. As already stated, it is protected, by a very simple method of drainage, from the possibility of inundation during the progress of the building, which was at first urged as so strong an objection to its execution. Equally unfounded is the apprehension that this vast repository of death will become the centre of accumulating putrefaction, and thus merely transfer the worst evils of the common cemetery, increased a hundred fold, to a spot from which, on account of its elevation, the winds of Heaven may scatter infection over the largest surface of population to be found on the face of the earth. If this objection were ever seriously entertained, it must have arisen from total ignorance of the plan and construction of the proposed sepulchre, or from a desire to crush the important undertaking in the birth. It has, however, afforded the architect the opportunity of demonstrating its fallacy, as well from the nature of the work, as from the provision made entirely to obviate it. The free circulation of air through every part of the building—the masonry and the brick-work, by which every deposit may be hermetically sealed for ever—and the vomitories, which effectually prevent the accumulation of miasma, and secure a healthful atmosphere through all the catacombs, entitle it to the unqualified patronage of every enemy to plague and pestilence, which from the usual receptacles of the dead are ever threatening to burst forth to desolate the city, which, with temerity amounting to infatuation, cherishes them in her very bosom."

For the present we shall refrain from entering upon the consideration of the economy of the plan. It may be merely added, that two millions and a half are calculated as amply sufficient to cover



all expenses from the commencement to the completion of the work. Such a sum may startle the hearer on its first announcement; but it should be kept in mind that the structure of the pyramid is progressive—it may be occupied as it is built, or built as it is wanted; and perhaps when it is taken into account how much is annually paid for burials in London (upwards of 150,000*l.* it seems), and this to provide only an uncertain and uninviting spot in a saturated grave-yard or charnel-house, we may become more reconciled to what seems at first a mighty expenditure.

If Mr. Willson's calculations be correct, the structure of the pyramid would, in reality, be a great saving to the public. It is calculated that 15 millions are expended by the metropolis for burials during a hundred years, and the pyramid promises to afford a receptacle for a much longer period;—in fine, if Mr. W. be correct (as we shall more particularly inquire hereafter), the structure of such a wondrous monument—so vast, so complete, and so secure—would yield the public in the course of a century a clear saving of twelve millions and a half sterling!

#### MEDICAL ESTABLISHMENT OF THE COURT.

IN our last number we gave all the appointments which we had ascertained to have taken place, but stated that some others remained to be made. These we now subjoin.

*Physician Extraordinary to the King, (in addition to those mentioned in our last.)*

Dr. Hume.

*Apothecaries to the King*

Mr. Davis.—Mr. Brande.

*Surgeon to the Household.*

Mr. Phillips.

*Surgeons Extr. to the Household.*

Mr. Keate.—Mr. Hammick.

*Apothecary to the Household of the King.*

Mr. Craddock\*.

\* This appointment has not been gazetted, but we have reason to believe it has been made.

*Surgeon Extraordinary to the Queen.*

Mr. Arnott.

*Apothecary to her Majesty.*

Mr. Davis.

*Apothecary to her Majesty's Household.*

Mr. Brande.

—  
*Oculists.*

Mr. Alexander.—Mr. Stephenson.

*Aurists.*

Mr. Curtis.—Mr. Maule.

#### ADDRESS OF THE ROYAL COLLEGE OF PHYSICIANS,

*Presented to His Majesty at the Levee on  
Wednesday, July 28.*

WE, your Majesty's most dutiful and loyal subjects, the President and Fellows of the Royal College of Physicians, approach your Majesty with a humble request to be permitted to mingle our sorrows with those of your Majesty and the nation, for the loss we have sustained by the death of a Sovereign who had the happiness, during his rule of this great country, to see its military glory carried to a height which surpassed even that of the Edwards and Henrys at the most brilliant era of British fame, and who promoted the arts of peace with a taste and judgment which will transmit his name to posterity among those of the most beneficent and illustrious princes who have adorned our annals.

Whilst we deplore such a loss, we have the consolation to contemplate in your Majesty's person a prince who has himself had experience on that element which has contributed to the triumphs of Great Britain, and who has already manifested to us such a determination to maintain the respectability of our Institutions, as gives rise to a confident hope that whilst he has the glory of being the arbiter of Europe, he will desire to find his happiness in the happiness of his subjects, and his real power in their concord and civilization. (Signed)

FRANCIS HAWKINS, *Registrar.*

#### HOSPITAL REPORTS.

##### GUY'S HOSPITAL.

*Case of Aneurism of the Arteria Innominata—  
Operation of tying the Carotid—Sudden  
Death—Singular Pathological Appearances.*

ELIZABETH GOODMAN, æt. 61, observed in

the month of September 1828 a pulsating tumor immediately above the right side of her sternum. This progressively enlarged till her admission into Guy's Hospital about October 15th, 1828, when it was as large as an egg, and rather flattened. The following note of the appearances was made at that time:—"The tumor rises from behind the right sterno-clavicular articulation, ascends to near one-third of the length of the sterno-mastoideus muscle, and extends outwards about one-third along the clavicle. Its pulsation is synchronous with the pulse, and then *dilates* on all sides, though pretty firm. The tumor has lately been very painful; numbness extends up the neck and along the right arm; nor can she lie comfortably on the right side.

"She is a swarthy little woman, of spare habit and regular living; has had a family and worked hard. Her pulse is 60 in the minute, hard and full on the right side, weaker on the left."

An occasional aperient was given her, and a belladonna plaster applied to the tumor.

In the course of six weeks, the tumor appeared somewhat larger, though she did not suffer so much pain from the pressure on the axillary and cervical nerves. Her pulse rose to 90, and the difference in fulness between the pulse of the two arms became more apparent. She did not suffer much dyspnœa.

V.S. ad  $\frac{3}{4}$ x.—Cap. Træ. Digit.  $\frac{1}{4}$ x. ex Liq. Amm. Acetat. bis die.—Rep. Empl. Bellad. p. r. n.

Under the occasional use of these measures, she improved till the following spring, when she left the hospital sufficiently well, as she thought, to work for her livelihood. The tumor was now stationary, for neither the painful numbness, nor any dyspnœa, nor the external enlargement, had increased.

In March 1830 she was again admitted by Mr. Key, on account of aggravation of all her symptoms, especially her difficulty of breathing on going up stairs, and the painful numbness of the right arm being now so great that she could not sleep. During her absence her health has been pretty good, and she has undergone much exertion. The tumor has not enlarged so much as might have been expected: though somewhat dilated on all sides, it is altered chiefly by the sensation of the sac being thinned; its pulsation is very violent, and it is very tender.

Cap. Opii gr. ss. o. n.—Empl. Bellad. tumori.—Sumat. Træ. Digit.  $\frac{1}{4}$ x. ex Liq. Salin. t. d.

Her symptoms were again palliated, though the weakness and faintness induced by the digitalis obliged it to be omitted.

In April the aneurism enlarged forwards very much, in some degree dislocating the right sterno-clavicular articulation. It was therefore rendered much more prominent, ascending behind the sterno-mastoid muscle (which, with the jugular vein, was pushed a little outwards) to the distance of two inches above the clavicle, and extending outwards to nearly three inches along that bone. Of course its pulsation could be felt far beyond these points.

As the health of the woman was good, as she was very desirous that some curative means should be adopted, and as her difficulty of breathing was much diminished, Mr. Key determined, as the only chance of averting otherwise sudden death, to tie the carotid artery, and if necessary the subclavian also at a subsequent period. In this resolution he was borne out by the corroborative opinions of Sir A. Cooper, Professor Ekström, of Stockholm, Professor Galenzowski, of Wilna, and others. These gentlemen appeared to consider that the aneurism was confined to the arteria innominata, and could discover no indication of the heart or aorta being otherwise than healthy.

*Operation.*—The operation was performed at half-past one P.M. on Tuesday, the 20th July. The patient walked into the theatre, and was laid on pillows on a high table, in a supine posture; her head and shoulders raised, and the former lying on its left side, so as to stretch the soft parts of the neck somewhat. Mr. Key stood on the right side of the patient, and proceeded to operate as follows:—

Commencing at the corner of the os hyoides, an incision was made downwards for an inch and a half along the anterior belly of the sterno-cleido-mastoideus (this being the extent of the space between the tumor and the os hyoides), so as to lay bare the cervical fascia and platysma myoides. Several little veins were found to run across the line of incision, all of which, except two, were avoided; then by gradual steps Mr. K. proceeded, using the edge of the scalpel cautiously, till he exposed the upper edge of the omo-hyoides muscle; here he laid aside the knife, and, by means of a director, separated the cellular membrane down to the sheath of the artery, on which was running a branch of the descendens noni nerve. Having laid bare the vessel, which appeared deep seated, he passed an aneurismal needle, armed with a silk ligature, under it, from within outwards. With the usual precautions the ligature was made fast, the coats of the artery appearing very readily to give way. The whole operation occupied fifteen minutes, and not more than half an ounce of blood was lost. The patient bore it without a murmur, and complained of pain only when the vessel was tied.

At the instant of the ligature being tight-

ened, the tumor first fluttered in its beat, and then became decidedly smaller, both in bulk and in its force of pulsation. The artery at the right wrist was not in the least affected, nor did the patient herself feel faint or sick, or in any way incommoded by the operation; for she spoke cheerfully, and appeared as well as before its performance. This diminution in the bulk of the tumor, however, was not permanent, for before she had left the theatre, it was nearly as large as previous to the operation, though its beat was certainly fainter.

*State of the patient after the Operation.*—She was immediately carried to bed, and appeared cheerful; her pulse 90, rather sharp, but also irregular in its beat; the tumor as before the operation in bulk, but with a fainter, and more irregular beat; her head was raised on a high pillow, and laid on the left side. She had not been in bed more than half an hour before she suddenly raised herself, gasped for breath, and called for something to drink; she then fell into a severe fit of coughing, which lasted, with little remission, for several minutes; her distress was such as to create an apprehension of instant dissolution from the rupture of the sac. She was, however, able to take a little ammonia, with ten drops of laudanum, which succeeded in quieting her immediately. Her back was supported by high pillows, and she was again quite calm. In about an hour and a half from the operation she appeared to be asleep; her breathing was natural, attended only by a peculiar snore, which did not now attract notice because it was habitual to her; this noise gradually became fainter, till at length it quite died away. She was thought to be in a comfortable sleep, and therefore not disturbed till about half-past 5 o'clock, when, on being seen, it was found that there was no pulse in the wrists, and that the heart was beating with a scarcely perceptible flutter. It was not possible to afford any relief, for in a few seconds more she died. From the time of the paroxysm of coughing she had not spoken, but appeared perfectly quiet, and died in the most calm, tranquil, and unconscious manner possible.

The body was examined 20 hours afterwards.—Both pleuræ were natural in appearance, but contained between them about a pint and a half of serous fluid. There was about 3iv. of serum in the pericardium; there was no extravasation of blood any where; the sac was adherent to the upper part of sternum, and adjacent part of the clavicle and first rib. These, together with the heart, left lung, and the soft parts in the neck, as far as the lower jaw, were now removed together, and a careful examination made.

The whole arch of the aorta, from the heart to its termination in the thoracic portion, was very much dilated, and all its inner surface quite rough, with numerous ossific scales spread on it—the heart itself was

sound, and the semilunar valves nearly natural. Besides this, there arose a distinct sac from the right wall of the arteria innominata, and from the adjoining part of the arch, which was about the size of a small orange. This tumor had risen up on the neck, had pressed forwards the sternoclavicular joint—had passed along the subclavian artery, and in less degree along the carotid—constituting the swelling which had been felt externally during life. This sac was more than half filled with laminae of fibrin, in various degrees of consolidation. The carotid and subclavian arteries were both quite sound, and not at all involved in the disease. The part of the innominata near the bifurcation was also lined with ossific scales, like the aorta, and its opening much enlarged. The ligature was fairly on the carotid about two inches below its division.

Upon prosecuting the dissection of the parts with a view to preparation, a most unusual circumstance was discovered—viz. the left carotid opened from the arch of the aorta by an orifice scarcely large enough to admit a small probe. It appeared as if a membrane had formed across its original orifice, very nearly resembling the membrane over the foramen ovale in the septum of the auricles of the heart, but what is still more singular is, that the carotid itself, from the aorta to the bifurcation, retained its natural calibre, though supplied entirely through a mouth scarcely one-tenth part of its natural size. There was no vessel whatever entering any part of this common carotid which could in any way have conveyed blood to it. At its division, the external carotid continued of its natural size, but the internal became abruptly very small, almost immediately after its commencement. The interior of this, the left common carotid, contained an adherent layer of fibrin similar to that in the aneurismal sac, and not at all like the strings of fibrin ordinarily found in blood-vessels. This appeared to be a step towards the gradual obliteration of the artery.

The subclavian was of its usual size, and the vertebals were rather small than otherwise on both sides; so that when the right carotid was tied, the brain was so very much deprived of its supply of blood as to render it unable to support the actions of life; and hence the quick and perfectly quiet dissolution which followed.

The brain was examined. It was found healthy; its vessels were quite sound, and contained the ordinary quantity of blood. There was a little serous effusion between the membranes.

The abdominal viscera were generally sound, except a small polypus in utero, which grew from just below the orifice of the left fallopian. The descending aorta was quite natural.



# THE LONDON MEDICAL GAZETTE,

BEING A  
WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

SATURDAY, AUGUST 7, 1830.

## LECTURES ON SURGERY,

Delivered at St. Bartholomew's Hospital,

By WILLIAM LAWRENCE, F.R.S.

### LECTURE LXVI.

*Paracentesis Abdominis—Diseases of Fibrous Membranes—Muscles and Tendons—Glandular System—Diseases of the Mamma.*

THE operation, gentlemen, of tapping the abdomen—*paracentesis abdominis*—becomes necessary in certain cases of *ascites*, and of the disease called *ovarian dropsy*. I need hardly observe to you, that in whichever of these you have to perform this operation, it is very necessary that you should previously satisfy yourselves of the nature of the case, and that you should be quite clear that the swelling really is produced by an effusion of fluid either into the abdominal cavity, if it be a case of *ascites*, or into the cysts of the ovary if it be *ovarian dropsy*; for I apprehend you would not be ambitious of performing an operation which I have sometimes heard called *dry tapping*, that is, tapping the abdomen without finding any fluid. I have heard of more than one, two, or even three cases of “dropsy,” which have been brought to a very successful termination by the natural process of parturition—a mistake that has been made even by experienced persons. So long as it is merely a question of *medical* treatment, the mistake would not be very serious; but when we come to the *surgical* process, that of thrusting a trocar into the abdomen, things would wear a very different aspect.

The presence of fluid in the abdomen is ascertained by the particular sensation which is communicated to the hand by the fluid within, when the belly is struck on the opposite side by the other hand. If you place one hand on the abdomen, and gently tap the belly on the other side with the

fingers of the other hand, you find a decided stroke of the fluid against the opposite hand; a sudden stroke is communicated by the fluid, affording an infallible indication of its existence within the cavity. If you do not perceive this particular sensation, you cannot be certain that fluid is there; or, rather, you may be pretty sure it does not exist in that part which is subjected to the examination of the hand. Now this sign is equally applicable to the case of fluid effused into the cavity of the abdomen, and to fluid contained in the cysts formed in the ovary. It is not enough for you to be satisfied of the presence of fluid in the abdomen—you must take care to be satisfied with regard to the particular spot in which you perform the operation; take care that the fluid extends to that particular spot, that there is as much fluid there as will enable you safely to plunge the trocar into the abdomen, without risk of wounding its contents.

The situation in which the operation should be performed, is in the *linea alba*. There you have merely to penetrate the integuments, the tendon formed by the aponeurosis of the abdominal muscles, and the serous membrane that lines them. There are no vessels to bleed of any consequence: the most convenient situation is in that part of the *linea alba* which is situated below the navel; we may say generally, one or two inches below the umbilicus, or midway between the umbilicus and the pubes. The mode of performing the operation is with an instrument which is called a trocar, from the French expression *un trois quart*; an instrument cylindrical in its shape, and brought at the point to three sides—hence the name *trois quart*. It consists of the stilette, or cutting part, which makes the perforation, and the canula which fits over it, the two being quite distinct; so that when you have penetrated the integuments with the stilette, and carried the trocar into the abdomen, you can withdraw the stilette, and leave the canula in its situation for the passage of the fluid. [This instrument, the sti-

lette, consists of a cylindrical portion of steel ground to a sharp point, with three flat sides. This is the ordinary shape of the instrument. It is also sometimes ground to the form of a lancet, that is, to a flattened shape, and enters with a cut more like that usually made by a lancet. This is found, however, to be more likely to divide bleeding vessels, and hence the old instrument, to which the name of trochar is generally given, is now generally employed. You introduce this instrument by holding it in the hand, and, putting the finger at the distance of about an inch from its extremity, you then carry it through the integuments into the abdomen as far as the finger;—draw the stilette back, and push the canula with the other hand into the abdomen, while you draw out the stilette with the hand by which it was introduced.]

It sometimes happens that when the fluid has in a great measure escaped, some portion of the loose contents of the cavity falls against the end of the canula, impedes the further evacuation of fluid, and causes a good deal of inconvenience in the operation, with a considerable loss of time. Under these circumstances you must have an extra tube; I have not got one, I see, here long enough—a tube which is not perforated at the extremity, but which has a blunt end like a female catheter, and is perforated at the sides; this tube projects beyond the end of the trochar, and fluid will escape through the perforations at its side, when the opening at the end would be filled up. It is well to be furnished with an instrument of this kind.

After allowing the whole of the fluid to escape through the canula, you apply the usual bandage to the abdomen; there is no harm, however, in leaving some portion of the fluid in the cavity of the abdomen; and when I say you should let the whole of the fluid escape, I mean that it is advisable you should do so for this reason, that if it has not all escaped after you have taken out the canula, it will continue to ooze out, and keep the patient wet and uncomfortable. For the comfort of the patient, it is necessary that the cavity of the abdomen should be completely emptied of the fluid before you remove the canula.

As the fluid issues out, and the pressure which has so long been kept up on the diaphragm becomes diminished, the patient often experiences considerable interruption in the act of respiration. There is a sudden and very considerable change in the mode in which this function is performed; thus a sensation of faintness is experienced, and the patient very quickly passes into a state of syncope. The risk of this occurrence would be diminished, if, while you draw off the water, pressure be made on the upper part of the abdomen, to supply the pressure of the water which you are removing.

For this purpose it is desirable to apply above the opening which you make with the trochar, a sheet folded of a sufficient width to cover the abdomen from a little above the navel to the ensiform cartilage. Apply the middle of the sheet to that part of the abdomen, and let it be drawn behind by two assistants, sufficiently tight to afford comfort to the patient. If the abdomen have been completely emptied, you will place a small piece of sticking plaster over the aperture made by the trochar, and then apply a broad roller of flannel round the abdomen with sufficient tightness to keep up the necessary pressure.

The mode of proceeding is exactly the same in ovarian dropsy, and the situation at which the tapping is performed is also the same. Tapping, however, is but little applicable to cases of ovarian dropsy, except in the instance of a single cyst. There are many cases in which ovarian disease consists principally of a solid fleshy growth; many in which there are a multiplicity of cysts filled with fluid, and each of no considerable magnitude. In the latter case the patient cannot derive any material alleviation of suffering from the operation; but in the case either of a single cyst, or of a very large cyst, with slight effusion into some smaller cysts, there is a very near assimilation to ascites, and then you can tap in the same situation. It may possibly happen that the ovarian dropsy is so situated as to render it necessary to perform the operation in some other situation than that part of the linea alba which I have pointed out. There can be no objection to making the perforation in another situation, but you must select a part in which no very considerable artery will be wounded, though, in fact, I do not know any part liable to this but the rectus abdominis muscle: in the lower part you may come upon a branch of the epigastric, and, in the upper, upon branches of the internal mammary. Except these situations, therefore, there is none in which you may not make the perforation.

The fluid which constitutes the swelling in ascites is generally of nearly an aqueous consistence, and therefore escapes very easily through the ordinary canula of a trochar. It is expedient, however, to use a pretty large instrument. It should not be smaller than the one I now show you, which is about the size of a large swan's quill; for the fluid takes a considerable time to flow out, even through a canula of this size. But, in ovarian dropsy, the fluid is often much thicker; it is viscid, sometimes ropy—a sort of mucilaginous fluid. In these fluids there are sometimes flakes, the substance of which is thicker, and there is often a considerable difficulty in drawing it away, the aid of the extra instrument which I have mentioned becoming still more necessary.

*Diseases of Fibrous Membranes.*

Under the head of *fibrous membranes*, I have nothing to say beyond making an allusion to the subject of *fibrous tumors* of the dura mater, and respecting them I have very little to offer, for I never saw a case of the kind. In the fifth volume of the *Memoirs of the French Royal Academy of Surgeons* there is an excellent memoir by M. Louis, which illustrates the nature, progress, and consequence of this affection. I have nothing to say upon the subject but what you may yourselves read in books.

We find, as perhaps would hardly be expected, that when a fibrous tumor is developed on the surface of the dura mater, instead of pressing in upon the brain, it makes its way outwards, perforates the skull, and produces a tumor of the scalp. [Here, said Mr. Lawrence, is an example of the kind, and you observe the internal surface of the dura mater to be quite smooth. This is another example illustrating the tendency of these morbid growths to form on the outside of the dura mater, and to make their appearance on the outside. Here is a case of several growths of this kind, situated on the external surface of a child's head, which is in consequence very irregular. Several of them derive their origin from the dura mater, and have thus perforated the skull. This is the opposite half of the skull-cap, taken from the head of the same patient, showing the manner in which the bones have been bored through by the absorbents. The perforations are almost as circular and regular as if they had been made with the trephine; they show how completely the hard bony substance may be removed by the absorbents.]

The inflammation of the *bursæ mucosæ*, where they are so situated as to be exposed to external injury, is very similar in its nature to inflammation of the synovial membranes of the joints. It is attended with an increased effusion of the fluid, which it naturally secretes, into the cavity of the inflamed bursa. We have frequent opportunities of observing this in the *bursa mucosa*, which is situated between the skin and the external surface of the patella; this bursa is much exposed to accidents, as it is also to another kind of injury, also of a mechanical nature;—I mean to irritation produced by kneeling on the patella, as is done by housemaids in their various domestic occupations. Hence a swelling arises, sometimes of an active inflammatory kind, and sometimes of a more chronic description, familiarly known by the name of the *swelled knee of the housemaid*. There is another pretty large *bursa mucosa*, situated between the integuments and surface of the olecranon, and this also is much exposed to external injury, although the consequent inflammation is not impor-

tant—that is, it does not lead to any serious consequence.

The inflammatory symptoms in these cases are often very severe, and the patients experience great pain. They require active antiphlogistic treatment, which becomes especially necessary where there has been considerable injury—such, for instance, as arises from a severe fall on the olecranon; for, in consequence of this bursa being immediately surrounded by the adipose and cellular membranes of the limb, when inflammation is excited in it, it is apt, if it be not checked, to excite inflammation of those membranes, giving rise to phlegmonous erysipelas of the whole limb.

When the inflammation of the *bursæ* has not been checked by active antiphlogistic treatment in its early stage, it proceeds to effusion, and we frequently find ourselves unable to relieve the patient without making an opening into the cavities of the *bursæ*. The sides of those cavities partake, in some measure, of a fibrous texture, so that if the inflammation have been active, and the fluid within the cavity be of a purulent character, escape is not easy, and the inflammatory symptoms run very high. Under these circumstances it is expedient to make a free opening into the bursa, to allow the purulent fluid to be discharged; it is better, indeed, to make the opening of a very considerable size, and, in fact, in some instances, to slit open the bursa its whole length.

After the bursa, particularly that which is situated over the patella, has been the seat of frequent inflammation, it sometimes becomes considerably thickened and enlarged; its sides are indurated, and it goes into a state in which antiphlogistic treatment has no longer any power over the complaint. In such cases of chronic enlargement, of thickening of the sides of the bursa many years old, it is sometimes necessary to dissect it away; to expose it by dividing the integuments, and to remove it entirely. There are some instances in which formations of matter have taken place, and sinuses have remained, where we can obliterate the cavity and get rid of the thickening by freely laying open the sinus; but in others it becomes necessary to dissect away the whole, and I have seen indurated masses, as thick and as large as half a fist, formed over both patellæ in cases of this kind.

*Muscles and Tendons.*

It sometimes happens that the muscular fibres are lacerated in consequence of external violence; I have seen an instance of this in the dead body. The *rectus abdominis* was nearly torn across; and I think there can be no doubt, that in a variety of injuries done to the limbs, muscular fibres are more or less lacerated, though in cases which do



not terminate fatally we have not the opportunity of ascertaining the fact. No doubt this is one of the causes of the pain and inability to use the limb often experienced after accidents to the extremities.

Tendons are also liable to accidents from injury; more particularly where they are large, as in the case of the tendo-achillis, which may be injured by over-exertion of the large muscles attached to it; in fact, it may be torn across, producing the case which is called rupture of the tendo-achillis. The nature of the accident is rendered apparent by the fissure—the interruption of the continuity of the tendon—that is produced between the two extremities, and into which you can introduce one or two fingers. The tendon, when thus ruptured, will grow together again. The limb must be kept at rest; it must be half bent, in order to relax the gastrocnemius, in which position the limb should be kept for about the same length of time that is necessary to produce the consolidation of a broken bone. This rest is not absolutely necessary, for there are instances of persons who have experienced a rupture of the tendo-achillis and who have not confined themselves at all; they have used a high-heeled shoe instead; but of course they would abstain from attempting to raise the foot; the muscles, indeed, could not perform their functions when the tendon was thus divided.

#### *Glandular System.*

I proceed next to speak of diseases of glandular organs, and I may, in the first place, treat of the diseases of the female breast, for diseases of the breast are principally seen in the female subject. It is true that males are also possessed of a breast, but in them it is not turned to any useful purpose, so it seems not to undergo any disease—which is only fair. One hardly knows whether the male breast is merely for ornament, or whether it is formed to keep up the general similarity in point of form between the two sexes; it is, however, very rarely the subject of any kind of morbid affection.

In suckling-women, inconvenience is very often experienced from a sore state of the nipples, which become excoriated, chapped, or ulcerated. Cases of this kind fall, perhaps, more under the care of accoucheurs and general practitioners than surgeons. I do not know, therefore, that I have much to say to you respecting the affection. It appears to me, that where unctuous substances, which women naturally have recourse to, are applied, some very simple thing is the best—simple cerate, or a soft, mild ointment. But where the nipple has been very troublesome, I have, in some cases, found relief from touching the sore with nitrate of

silver; which, indeed, has answered better than any thing else. Let the nipple be dry, free from all moisture, and then apply the nitrate of silver. Of course you do not suffer the child to be put to the breast again for four-and-twenty, or twelve hours, at the least. The application may be repeated once in two or three days.

The female breast, during the period of suckling, is often affected with acute inflammation, which proceeds to suppuration—to the formation of plegmonous abscess. This, which is merely acute inflammation of the breast, is called, in consequence of the particular period at which it takes place, *milk abscess*; and when it breaks externally, the case, in common language, is termed a broken breast.

The phenomena of inflammation, occurring in the breast, are so exactly similar to those which have been detailed under the general description of inflammation, that I need not repeat them. I would only say, respecting the *causes* of this affection, that they seem referable partly to the vascular activity of the breast, an activity which is attendant on the secretion of milk, partly to the mechanical irritation to which the breast is then liable, and, lastly, in suckling-women, when the milk does not come freely, to attempts made by the mother or nurse to promote its flow. These causes, on many occasions, act with peculiar force, because the woman is kept, from the warmth of her apartment and clothing, her stimulating diet, and so on, in a state which predisposes her to inflammation and consequent suppuration. I do not find that the nurses and attendants whom we usually meet in lying-in rooms, at all admire the antiphlogistic plan; they seem to me to think that a great quantity of good things should be taken; that the system should be “supported,” as they call it, with plenty of meat and drink; they are, accordingly, very apt to supply lying-in ladies with porter, wine, spirits, and the various other good things of this world, in which they themselves delight. Thus it happens really that a feverish state is produced, and we cannot wonder, therefore, that serious local inflammation should attack the breast, and go on as I have stated.

This active inflammation may affect either the whole or only a part of the breast. Sometimes it is situated near the external surface, and sometimes it occupies the centre of the gland, and sometimes even it seems to be seated on the surface which is towards the parietes of the chest.

If we see a case of inflammation of the breast in its very early stage, where pain is experienced in the part—where there is a sensation of heat to the touch, and where the patient finds the breast hot, without its having become hard or under-

gone inflammatory induration, and without its being much swelled—and where the secretion of milk still subsists; if, as I observed, we see the case when these symptoms are present, we may put a stop to the inflammation and prevent suppuration, by adopting an active antiphlogistic treatment—that is, by freely applying leeches to the breast, by using evaporating lotions, by purging, and also by preventing the child from being put to the breast. You certainly can do no good while you allow the suckling to go on, for that would be permitting a source of irritation which is calculated to continue and aggravate the inflammation. The removal of the child from the breast, therefore, is an essential part of the treatment, at whatever period that is undertaken. If the antiphlogistic treatment do not succeed in arresting and reducing the inflammation, it will at least diminish the extent of the suppuration; it will lessen the quantity of matter and the size of the abscess. When matter has formed, it becomes a question whether it is better to allow its gradual approach to the surface, or to attempt relief by an opening. I should observe, that when we perceive matter has formed, or is likely to form, the cold applications should be discontinued, and that the patient will derive more comfort from fomentations and soft poultices. If the suppuration of the breast be partial, if it occupy a small portion of the gland, and if it be situated near the external surface, I believe the best practice is to leave the case to its natural progress, to allow the matter to find its own way out and be discharged by bursting; but if the whole gland be inflamed, if the matter occupy the centre, if we have reason to suppose it to be situated beneath the gland, or between the under surface of the gland and parietes of the chest, we can considerably accelerate the period of relief by making a free external opening; we can procure ease for the patient, we can liberate her from the very severe local suffering, and reduce the high degree of excitement which attends this affection twenty-four or forty-eight hours earlier than relief would occur by the natural process; and perhaps we can limit the extent of the mischief which will ensue, for the texture of the breast is so loose, there is such an abundance of cellular and adipose membrane about it naturally, that a very considerable quantity of matter may collect before reaching the surface. It does not make its way externally so directly and rapidly as when formed in many other situations; still I think it will be of no advantage to make an opening if you have much thickness of parts to cut through. You would not think, even in such a case as I have mentioned, of making an opening unless the skin was becoming so thin that you could

feel the matter pretty distinctly; but when this is the case you may make a tolerably free aperture, and allow the matter to escape.

The breast is liable to chronic inflammation and to chronic abscess, which may be of the scrofulous kind; that is, they may occur in individuals who present marks of a scrofulous constitution, and both the characters of the disease itself, and the nature of the pus that is formed, may be assimilated to those which we see in scrofulous abscesses situated elsewhere. The breast is not very liable to scrofulous inflammation, and cases of this kind, therefore, are not common.

In its treatment we should adopt such local means as are suited to the symptoms; mild antiphlogistic measures may be necessary; a few leeches, poultices, and so forth. We sometimes find in these cases, that after the matter has been discharged by an external aperture, the opening remains fistulous, while fresh formations of matter commence, make their way to the surface, and also end in fistulous openings. Thus several apertures may be formed on the surface of the breast, each leading to a fistulous opening which runs through the substance of the organ. The general treatment, however, is of more consequence in these cases than the local, and where the affection is of a scrofulous kind, we should adopt those constitutional means of relief which I have already pointed out in speaking of scrofula. It will be found, in most instances of chronic disease in the breast, whether of a scrofulous or other description, that the functions of the uterus are not rightly carried on; for if they be naturally performed, the breast will seldom become the subject of disease. There is a close connexion between the two; the breast is, in a great measure, subservient to the uterus, and we find that if the latter remain healthy the breast will generally be healthy also. We ought, therefore, carefully to inquire into the uterine condition, and adopt means for correcting that condition when it is unhealthy. Aloetic and chalybeate medicines are particularly proper in these cases.

In many instances the substance of the female breast undergoes a slow kind of induration and condensation, unconnected with any very essential change of structure. On feeling the part you find a kind of lobulated tumor, which seems as if it were a part of the natural structure of the mammary gland, differing only in the circumstances of its being much firmer and harder. This change may affect either a part only, or it may involve the entire substance of the gland. We find it sometimes in both breasts at once. I have seen this affection produce retraction of the nipple to a considerable extent, an effect which, ordinarily, is considered to be characteristic of a scirrhus affection. It is

not, however, to be regarded exclusively as an indication of scirrhus, for it may take place under the circumstances I am now describing.

This chronic condensation of the substance of the breast takes place more particularly in females who have arrived at a certain age, and are single. It is observed to occur in unmarried women, perhaps from the age of twenty-five to forty years; it comes on slowly, and almost insensibly. Frequently when our opinion is asked respecting a case of this kind, we are informed that the patient has known that the lump of which she speaks has existed for some years. Not long ago I saw a case of this kind, where, on investigating the circumstances attending the affection, the lady informed me that she had been, in some degree, aware of the existence of the tumor for seven or eight years; and at the time I saw her, this kind of lobulated hardness occupied nearly the entire mammary gland of one side, and existed in one portion of the gland on the opposite side. In the gland which had first been the seat of disease, the integuments were drawn in at one point, as is observed in cancer, and there was a partial retraction of the nipple. In this case the exhibition of steel medicines, good diet, attention to exercise, and so forth, which are the means best calculated to invigorate the system, and more especially to act on the uterus, brought things into a quiet state. They did not, however, remove the tumor, for the gland remains indurated as before.

The mammary gland is sometimes the seat of painful sensations without any visible alteration in the structure, an affection which probably may be called neuralgia of the female breast. Perhaps the gland may appear to be a little larger than natural, but there is no external redness, no hardness of the substance, and if we were merely to trust to the evidence of the touch, we should say that no disease existed; but the patient is sometimes subject to very severe pain,—indeed pain so severe, as to prevent her from making any exertions which affect the breast, or from using the arm on the affected side, and really altogether such as to affect the system very considerably. Like other neuralgic pains, these are not constant; they are experienced more particularly at certain times, as previous to the monthly periods, while sometimes the patient is comparatively free from them.

Now, it is more easy to say what will not do good in those cases than to point out remedies that will remove the pain. This affection (which, by the way, Sir Astley Cooper has called the irritable breast) cannot be cured by antiphlogistic treatment. It is in vain to try leeches, to purge, and to use other means of a similar tendency,—they will not do. Perhaps the exhibition of steel

medicines may do good, but there are instances in which they also fail. Then the narcotic plan has been tried, conium, hyoscyamus, and, more particularly, the belladonna plaister, on which some persons place considerable reliance in neuralgic affections, but from which I cannot say that I have ever seen any great benefit derived. Mr. Teale regards these neuralgic affections as depending on something wrong in the spinal cord; it may be as well, therefore, for you to direct your attention to this point in such cases.

The female breast is liable, as I have already said, to change of structure of a malignant character, to cancer, and to fungus hæmatodes; more particularly to the former, to which I have no occasion again to advert. I must observe, however, that the female breast is also liable to affections which are not malignant, but which resemble the malignant both in the change of structure, and in certain stages of their progress. In consequence of this resemblance, it becomes very important that you should pay close attention to the circumstances attending disease of this part, that you may be enabled to distinguish between those which are, and those which are not, malignant, and that you may adopt the proper treatment in either case; for I need not observe, that the remedies are very opposite. It is important that you should not mistake between them, for the treatment is materially different. These cases are generally known to the family, too, and the consequence of any misapprehension as to the nature of the disease and the mode of cure, would be very prejudicial to the interests and character of the medical practitioner. I may also observe to you, that it is of very great importance to the patient, that right opinions should be formed. In some cases an operation may be required, and not performed, or an operation may be performed unnecessarily.

The breast is liable to enlargement from a kind of simple growth—simple vascular excitement—augmentation in bulk of the natural structure of the part, with more or less of condensation. Some time ago I had occasion to remove a very large tumor of this kind from the breast of a female, in whom the growth was about two years' standing—not more. She was a woman who had naturally very voluminous breasts, and in one of these immense masses (for they were quite immoderate in point of size) swelling took place towards the centre, not marked by any peculiar character. I saw the patient at the beginning, and recommended leeches and means of that kind. She lived in a remote part of England, and having attended her at the onset, and given her some general directions, I did not see her again for a long time. After the lapse of a year, or rather more, she came again to consult me,



and she then had the most enormous tumor in the breast I almost ever saw; larger than my head. It was tolerably firm, and did not appear to the touch to contain any fluid. The skin was of course tense. The tumor itself was easily moveable on the side of the chest; a circumstance which, in the advanced stage, is important, as generally indicating the innocent nature of the affection, or at least as negating the supposition of the fungoid or cancerous nature of the swelling, which at the later period became fixed to the side. There was no pain in this case. The patient had been delivered of a child since the time at which I had seen her, and she had suckled the child with the diseased breast. This was now of so formidable an appearance in point of magnitude, that the practitioners under whose observation it came in the remote part of England in which she resided, represented to her very plainly that it must destroy her—that there was no cure for it. She did not much like the necessity of making up her mind to die, and she intimated, therefore, that she should like to come to town to consult me about it; the more so, as it happened that I had had a child of hers, I believe, under my care, with a double hairlip, on which I operated, and which did remarkably well. They laughed heartily at the idea of her coming to town. They said she could not possibly undergo with safety the fatigue of the journey: she was much weakened, and had had leeches repeatedly applied to the breast; and they said, that if she did at last make the journey, most likely the London surgeons would perform some desperate operation, under which she would die. However, she felt herself getting worse and worse, and she made up her mind, that if she should die on the road, she would attempt the journey; and accordingly the medical gentlemen in the country dismissed her with this consolatory remark, that she had better bespeak her coffin than go to London—that she had better die at home than go and perish under the knife in town. Well, she came, and certainly the tumor was larger than my head. Upon reviewing her state, however, I deemed her to be a person of good constitution, and of a favourable age (about 36 years); the swelling was quite moveable, and though large, did not seem as if the removal would occupy a very long time. I suggested the propriety of excision, and she consented; and the case did very well. Upon subsequently cutting through this breast, it seemed to consist merely of an immense enlargement of the natural structure, without the formation of any adventitious structure of any kind. So much of the natural structure remained, that on cutting through it, an immense quantity of milk and creamy fluid, many ounces in amount, flowed out from apparently enlarged lactiferous tubes. We

could distinctly see those large lactiferous tubes divided. Such was the nature of this tumor.

There is a simple vascular enlargement of the breast, which often proceeds to a very great magnitude, throughout which there are cells or cysts dispersed; this is called by Sir Astley Cooper, in his work on Diseases of the Breast, the *hydatid tumor* of the breast; a name which I do not think very well chosen, for by *hydatid*, we generally mean a detached growth, which in many instances is clearly and decidedly an animal; at all events it is something contained in a cell not adherent. Now the cysts that are found in these breasts are merely excavations—cysts like those that are found in the ovary, and not detached bags. Moreover, the cysts do not seem to me to form the essential part of the disease, for they are trifling, few, small in amount, compared to the general bulk of the swelling, which consists of a vascular enlargement of the breast. This is the kind of case, I suppose, which is called by Mr. Abernethy *cystic sarcoma*. You may have many such tumors existing together, or even a single cell or cyst may form in the mammary gland, of which there are instances. [Mr. Lawrence here exhibited an example of the kind—there was a simple cyst, a simple smooth bag, about the size of an egg.] It may happen that some of those cysts may enlarge, come near to the surface, present a feeling of fluctuation, and induce you to puncture them, and then the clear watery fluid which escapes will point out what the nature of the affection is. There are instances of a simple cyst, where the fluid has been let out by a puncture, where some degree of inflammation has occurred, and where the cyst has been consolidated. But where the cyst is larger, and seems to increase, we have no means of stopping its progress or removing the affection, except by the removal of the part. This, like the case I have just mentioned, is an unadherent tumor; it is loose, and lies upon the pectoral muscle. There is no affection of the gland in this case, and the health of the female does not suffer materially.

The female breast is often the seat of small fleshy tumors, seldom exceeding the bulk of an egg, which are somewhat analogous in structure to that of the breast itself in which they form; but, in the proper sense of the term, they are new depositions, new growths, tumors, in the proper sense of the term, generally of a firm feel, loose in their situation; that is, connected by loose cellular texture to the surrounding parts of the breast, and very commonly about the size of a hazel nut—at all events hardly ever going beyond the size of an egg. They are apt to be painful; they occasion uneasiness, and are tolerably firm to the feel. We have no means of lessening or check-

ing the growth of these tumors, and therefore I think it advisable to remove them. It is only necessary, under such circumstances, to remove the growth itself; you do not want to remove any part of the gland. When you cut into them, you find that they are hard and lobulated on the external surface, and tolerably vascular.

Sir Astley Cooper mentions the formation of little hard knots in the breast, under the name of *irritable tumor* of the breast. I do not recollect having seen any case exactly corresponding to his description, which illustrates the kind of growth I have had occasion to mention under the head of *painful subcutaneous tumor*. If such a thing take place in the breast, you must, of course, remove it.

Now these are the principal affections of the breast. I cannot pretend to say that they include all varieties of enlargement, or all the affections with which you may meet; for it is difficult to comprehend all sorts of growths of this kind under any description; indeed we cannot, by lectures or description, teach all that is to be known in medicine and surgery. We can only lay down such general principles as will enable you to apply your own observations. Certainly, in discriminating these affections, the most important thing is to decide between the malignant and the innocent, and, more especially, between that which is, and that which is not, cancerous. In this respect, one great point to assist you, is the age of the individual affected. Cancerous affections of the breast are very rarely found before the age of thirty. They do not usually commence till forty, or afterwards. Most of the various other affections, however, more commonly occur previous to these periods of life. The looseness of the innocent tumors, their want of adherence to the skin, their non-adherence, or only loose connexion to the mammary gland, their non-adherence to the chest on which they are formed, their non-contamination of the glands of the axilla, and the absence of all material interference with the health of the patient—these are circumstances that will enable you to form your diagnosis. I have sometimes heard the diseases of the breast dismissed in a very summary way, as thus:—"The disease is either innocent or malignant; if it be malignant, you will do no good by operating; if innocent, it will get well without any operation." Now I cannot include all I have to say within that short statement. In the first place I cannot say, that if the disease be malignant, you will do no good by operating; because, in the very early stage of the disease, I believe you may do good by it—you may either remove the disease entirely, or check its progress for many years; you may, therefore, do good in malignant cases. In the next place,

I cannot agree to say, that if the affection be innocent, the disease will get well without any operation; for there are many cases which will not get well, in which the tumor grows to a great bulk, is attended with great pain, and, at all events, is a source of great anxiety to the mind of the patient and her friends, who are perpetually haunted with the fear of cancer, whenever any disease takes place in the breast. If, therefore, we can entirely remove the thing, we have at all events the advantage of setting the minds of the parties at rest—an object which it is no inconsiderable benefit to accomplish.

## LECTURE LXVII.

DISEASES OF THE TESTICLE—*Varicocele*—*Hydrocele*—*Hæmatocele*—*Inflammation of the Testicle*—*Cystic Sarcoma*—*Cancer*—*Fungus Hæmatodes*—*Neuralgia*.

DISEASES OF THE LIVER—*Abscess*.

DISEASES OF THE THYROID GLAND—*Bronchocele*.

THE veins of the testicle, which constitute a considerable portion of the spermatic cord, are liable to enlargement, and give rise to the affection technically termed *Varicocele*—which is, indeed, an enlargement of the veins exactly similar in its nature to that which occurs in those of the leg. It produces a soft and compressible tumor, rather irregular on its surface, in which we can feel very distinctly the congeries of vessels which make up the swelling. The tumor is larger in the erect position of the body, when the varicose vessels are distended, but diminishes in the horizontal position, when the blood returns from them. It is larger below in the neighbourhood of the testicle, and smaller above towards the external abdominal ring. Although, on the one hand, it resembles a hernia in the circumstance of its being larger in the erect, and less in the recumbent posture, on the other it does not, like hernia, become larger by holding the breath and by coughing; nor is any impulse felt in it communicated by coughing. In the commencement of this affection, the patient generally experiences uneasiness in the cord, and a dull heavy pain in the testicle. After they have lasted some time, these uneasy sensations go off, and the patient no longer experiences much inconvenience, but the enlargement of the veins still continues. Occasionally this varicose enlargement is accompanied with a diminution in the size of the testicle itself. The gland shrinks; it appears to diminish in all its dimensions—it passes into a state of atrophy. [Mr. Lawrence here exhibited a testicle that had become dimi-

nished in that way ; it was reduced to about the size of a hazel nut ; there was no disease of the part, but a natural shrinking—a state of atrophy of the testicle.]

While this affection is in its painful stage, it may be expedient to apply leeches to the spermatic cord, or to the testicle itself, to keep the patient in the recumbent posture, and to adopt other means that are calculated to reduce this symptom. Generally speaking, all that is necessary in a case of varicocele, is to suspend the testicle in a bag, so as to favour the return of the blood from the part. This removes the inconvenience which attends the complaint in its chronic stage, but it does not remove the complaint itself ; which is, in fact, incurable. The veins continue permanently distended, and if the patient experience no pain, the affection is of little consequence.

The testicle and the spermatic cord are liable to swelling and watery effusion, and these constitute the case termed *Hydrocele*. The termination of the word, *cele*—a syllable which we meet with in many of the names that are given to affections about this part in particular, is derived from the Greek *κηλη*, meaning simply a tumor: varicocele means a tumor produced by a varicose state of the vessels; hydrocele, a tumor produced by a watery enlargement.

The complaint which we call hydrocele, may either be situated in the testicle itself or in the spermatic cord:—hydrocele of the tunica vaginalis testis, and hydrocele of the spermatic cord. The former is by far the most frequent ; and when we speak of hydrocele simply, we usually refer to the affection as situated in the testis. Hydrocele of the tunica vaginalis is, in fact, dropsy of that serous membrane ; it is an affection bearing just the same relation to the tunica vaginalis, that ascites or hydrothorax bears to the serous membrane of the abdomen or of the thorax. It consists in a preternatural secretion of a clear transparent straw-coloured fluid into the cavity of the tunica vaginalis. The fluid that constitutes the tumor surrounds the testicle, or at least is in contact with its anterior and lateral surface. It commences at the lower part of the scrotum, and gradually ascends towards the abdominal ring, but it terminates generally a little above the testicle—that is to say, where the tunica vaginalis ends. This serous tumor ascends only a little way above the upper part of the testicle, and the same distance limits the swelling in hydrocele. If, however, the hydrocele be of long standing, the tunica vaginalis gradually ascends in front of the spermatic cord, becoming elongated in the direction upwards, and may be so much distended in this direction as to reach upwards as far as the abdominal ring ; indeed it may even

go beyond this, for the swelling in some cases continues along the spermatic cord into the abdominal canal. Generally speaking, we may say the distinction between hernia and hydrocele is, that in the latter complaint the swelling terminates a little above the testicle, so that you can feel the spermatic cord free. But in the older cases you have not this distinction to judge by, and you must then form your diagnosis from other circumstances. The swelling of hydrocele is generally pyriform, with the broader part downwards and the narrower upwards. The tumor is uniform on its surface, and is usually somewhat soft to the feel ; in fact, as the tumor contains water, you would naturally expect it to be compressible, and convey a sense of fluctuation to the fingers. Sometimes the tunica vaginalis is so relaxed that the tumor is quite soft ; and on pressing the swelling you can discern the outline of the testicle within the fluid. Generally speaking, however, the tunica vaginalis is sufficiently distended to prevent you from feeling the testicle, so that one of the symptoms of this affection is, that the testicle cannot be felt. Sometimes the tunica vaginalis, being rather strong, becomes very tense from this secretion of fluid ; and the tumor has the firmness which you would be disposed to say indicated solidity. It is occasionally so tense, indeed, that by the mere feel you could not distinguish it from a solid swelling. The fluid ordinarily is transparent, and of a light lemon or straw colour, so that the light will partially pass through it. Hence, in a doubtful case, examination with a lighted candle, placed on one side of the tumor, will enable you to discover a degree of transparency in it. In order to render this more effectual, you should darken the room by closing the shutters, and then, placing one hand on the posterior and the other over the anterior part of the swelling, let the candle be so held on one side of it that, on looking at the other, you can see if any of the light from the candle be transmitted through the tumor. This will help you, in some cases, to distinguish the nature of the swelling, where it is doubtful ; and although you may have sufficient confidence in your diagnosis to think it unnecessary to resort to this trial, yet there are cases in which we are glad to avail ourselves of all the means within our reach. You are not to consider this transparency as essential to hydrocele. It may happen that the tunica vaginalis is so extremely thick as to be opaque. This [exhibiting it] is a tunica vaginalis of about the natural thickness ; but here is another, which is very dense, thick, compact, and strong—so that no light could have passed through it. There are instances in which the contained fluid is not transparent. In the course of last summer



I had under my care a gentleman who had been for a long time in the West Indies, and who returned to England with a hydrocele on each side. These required the operation of tapping, which I performed. On the one side, the fluid of the tunica vaginalis was of the ordinary colour, but on tapping the tunica vaginalis on the other side, the fluid proved to be of a milky whiteness, and, of course, quite opaque. I do not know exactly what were the circumstances that produced the colour. I placed the fluid in the hands of an eminent chemist, whom I have not since happened to see.

The causes of hydrocele are obscure. In general the fluid forms without any apparent cause, gradually increases, and if left to itself produces a very considerable swelling. In some instances the fluid of hydrocele is deposited in the tunica vaginalis under circumstances which indicate the existence of inflammation of the testicle; and this case, which combines enlarged tunica vaginalis and disease of the testicle, and in which the fluid has been deposited under active inflammation, is technically called *Hydrosarcocele*. But, in the great majority of cases on which you will have to operate, the deposition takes place without the existence of any symptom indicating inflammation in the membrane that produces it.

The treatment of hydrocele is either palliative or radical. The palliative treatment consists in puncturing the tumor with a small trocar, and letting out the fluid, by which you get rid of the swelling, and free the patient from the incumbrance which the tumor produces. The fluid again slowly accumulates, and the operation must, of course, be repeated. The effect of it, therefore, is merely the removal for a time of the inconvenience produced by the enlargement of the scrotum. In the radical cure of hydrocele, various proceedings have been employed, in order to produce inflammation in the surface of the tunica vaginalis, and thus either to obliterate the serous membrane altogether, or put a stop to the unnatural secretion from it. Various means have been employed for this purpose. One proceeding has been termed the operation by incision. It consists in making an opening into the tunica vaginalis, and removing a small portion of it, or introducing some foreign substance between the margins of the incision, and then leaving the part to itself; the consequence of this is, considerable inflammation, ending in adhesion of the tunica vaginalis to the testicle. Another mode of proceeding is by seton, and in which a seton is carried from one end of the tunica vaginalis to the other—that is, the seton introduced at the upper end of the tunica

vaginalis, is carried through it to the lower end, so as to pass for two or three inches through the cavity of that membrane. A third mode is by caustic. A portion of caustic is applied to the scrotum externally, and when the slough has come away, a piece of bougie, or some foreign substance of that kind, is introduced, and inflammation of the membrane is thus excited. Another method is, after letting out the fluid of the hydrocele in the same manner as in the palliative cure, with a small trochar to inject through the canula some irritating fluid into the cavity of the membrane, the presence of which excites inflammation of the tunica vaginalis. The consequence of this inflammation is to prevent the re-accumulation of fluid. This is the treatment by injection.

Now as the latter mode is found to be the easiest and simplest, it is usually adopted, and I need not enter into any particulars respecting the others. In the treatment of hydrocele by injection, then, you first of all tap the swelling with a small hydrocele trochar, as you would simply to let out the fluid; and having evacuated the contents, you inject into the cavity of the tunica vaginalis, through the canula of the same trochar, a mixture of port wine and water, two-thirds of it being wine, and one-third water; this you allow to remain for five minutes, and then you let it out. For my own part, I am generally in the habit of injecting a second quantity of fluid on this occasion, frequently using port wine alone, in order to be quite sure that a sufficient impression is made on the tunica vaginalis to ensure the purpose of the operation. If you inject a second portion of port wine and water, or of wine alone, let it remain in for the same length of time, and having let it out, close the wound with a bit of sticking-plaster. Such is the operation.

In tapping a hydrocele, either for the palliative or the radical cure, you must take care not to wound the testicle. It is necessary that a certain quantity of fluid should be accumulated in the cavity of the tunica vaginalis, to prevent an accident of this kind; for which purpose also you must first introduce the trochar perpendicularly, so as to go completely through the scrotum and tunica vaginalis; when you have entered the cavity of the latter, carry the instrument onwards obliquely for a short distance, and then withdraw the stilette, and push the canula forwards to its full length. There is some degree of attention necessary, more particularly in performing the radical operation, because if you do not carry the trochar completely into the cavity of the tunica vaginalis, you may inject the port wine into the cellular substance of the scrotum; and I have seen, during the operation, the integuments of the scrotum become so wrinkled and corrugated,

as to alter considerably the relation between the different parts, the aperture into the tunica vaginalis being in this way thrown off the extremity of the trochar, so that the accident I have mentioned might easily have taken place. If you inject the fluid into the cellular substance of the scrotum, it is followed by a high degree of inflammation, and perhaps with sloughing of that membrane. It is necessary, therefore, that you should pay particular attention to these points, in order to avoid the possibility of this occurrence.

The injection of port wine and water into the tunica vaginalis, sometimes produces considerable uneasiness in the testicle, pain shooting up along the spermatic cord, and pain in the loins and across the lower part of the abdomen, sometimes to a very considerable extent. In other instances, however, the patient is hardly sensible of any inconvenience. In the course of two or three days after the operation, the testicle and tunica vaginalis swell, and acquire a size at least equal to that which the tumor possessed previous to the operation. Of course it is expedient that you should prepare the patient for this occurrence, by telling him beforehand what will happen; otherwise he may be alarmed by the supposition that his complaint has returned within so short a time from the performance of the operation. This is a kind of *hernia humoralis*—inflammation of the testicle and its coats, but unattended with much inconvenience. The patient keeps quiet, lies on a sofa, perhaps applies a lotion to the part, and remains in-doors, and probably in about three weeks from the time of the operation, the swelling will have subsided, and the testis regained its natural size. The operation is sometimes attended with so little inconvenience, that the patient does not even confine himself within doors. In the course of the last month I injected the hydrocele of a gentleman of sanguine temperament and florid appearance, who, it might have been supposed, would have suffered considerably from the injection. I injected, in the first place, a mixture of two-thirds of portwine and one-third of water, which I kept there for five minutes; after that I threw in nearly pure port wine, allowing it to remain for five minutes. He hardly experienced any thing like pain. I told him to stay in the house, and go to bed if he felt any uneasiness; but if not, that he might lie upon the sofa. I called on the third day, when he had left a message for me, saying, that he felt very well, and had been obliged that morning to go to his counting-house. In fact, he got so well as to be able to go from his house to the city, to attend to his business from that time, not being ill enough to cause him even once to lie down. The

effect of the operation, however, was complete; the testis slowly swelled, and then slowly subsided.

Other fluids may be injected in cases of hydrocele besides port wine and water. A drachm of the sulphate of zinc to a pint of water, forms one; indeed various irritating fluids may be used.

I have mentioned to you, that effusion of fluid into the tunica vaginalis of the testis is sometimes accompanied with swelling of the testicle. We are sensible accordingly, in certain instances, that a swelling of this nature partly consists of an enlargement of the solid part of the testicle, and partly of fluid, and when we have drawn off the water, we are better able to determine how much of the swelling arises from the solid part. In a case of this kind the question is, whether the operation by injection, or any other mode of proceeding, for the radical cure of hydrocele, is most suitable. If the swelling of the testicle should be inconsiderable, not exceeding twice its natural magnitude, and pretty hard—if it has formed gradually, and without pain, as hydrocele usually does—I have never scrupled, under such circumstances, to perform the operation of injection, and, in most instances, I have found that the solid swelling of the testicle has then gradually subsided, and I have not seen any case in which the operation has been attended with unpleasant circumstances. I have seen no instance in which the hydrocele has become more considerable afterwards, or the parts have been at all injuriously affected by it.

Hydrocele sometimes occurs in infants soon after birth, and is either hydrocele of the tunica vaginalis, such as I have now described, which, in consequence of the thinness of the tunica, and the transparency of the swelling, renders the nature of the case very obvious; or it is a case in which there is a communication still subsisting between the tunica vaginalis and the cavity of the abdomen, so that the fluid contained in the former passes up by pressure into the latter. In the case of simple hydrocele of the tunica vaginalis of an infant, I have hardly ever found it necessary to perform an operation. Sometimes those hydroceles disappear of themselves, without any treatment at all; but generally you prescribe a lotion containing a little of the muriate of ammonia, by the application of which the swelling is dispersed. I do not know that after failure of this measure I have not, in two or three instances, simply punctured the swelling with a lancet, and let out the fluid, and then that the swelling has gone away; but I have never found it necessary to adopt any thing like the proceeding for the radical cure.

The hydrocele which communicates with the cavity of the abdomen is more rare. You would of course avoid meddling by operation

with a case of that kind, because if you puncture the tunica vaginalis, you do, in fact, puncture the cavity of the abdomen. Without saying, therefore, that no combination of circumstances can arise in which it would be necessary to perform the operation, I should advise you to avoid it, unless there be some pressing circumstance indicating a necessity for the measure.

*Hydrocele of the Spermatic Cord* consists either in the formation of a cyst in the cord, and in the accumulation of fluid in that cyst, which may increase to a very considerable magnitude; or in the deposition of fluid surrounding the spermatic cord, so that it is diffused through the cellular tissue. The latter occurrence is very uncommon. I have not seen more than some two or three instances, and those were not very clear, so that I have nothing particular to say to you on the subject.

The encysted hydrocele of the cord which presents an isolated and detached fluctuating swelling, containing fluid, must be treated just in the same way as hydrocele of the tunica vaginalis. The fluid is colourless; it does not present the same straw or lemon colour which you see in hydrocele of the tunica vaginalis; and I recollect an instance of a person who had hydrocele of the tunica vaginalis, and also of the spermatic cord, where the patient himself immediately noticed the difference of the fluid which flowed from each: that from the lower hydrocele was nearly the colour of urine, while that from the upper was like water. You may inject these with port wine and water, just as in hydrocele of the tunica vaginalis.

In consequence of injury to the testicle, sometimes in consequence of the division of a vessel in the operation for hydrocele, blood is effused into the cavity of the tunica vaginalis, and hence arises the case called *Hæmatocoele*, which means a bloody tumor. This is a soft fluctuating tumor—a tumor obviously consisting of fluid: on puncturing it, however, we perhaps let out a bloody fluid of watery consistence, or a thickish bloody fluid of a dark colour. Sometimes it is a more solid tumor, the fluid part of the blood having been absorbed, the coagulable part remaining.

[Mr. Lawrence here exhibited a specimen of hæmatocoele in which the operation of castration had been performed. The testicle behind was quite sound; the tunica vaginalis contained a coagulum of blood.]

The treatment of hæmatocoele must be exactly similar to that of hydrocele. If the complaint be troublesome from its size, you puncture it; and if the contents be fluid, you may, after puncturing, inject it as in hydrocele; under other circumstances, that is, if the contents consist of this coagulated fibrin of the blood, it may be necessary to make an opening, so as to expose the interior, more

effectually to clear out the contents, leaving the surface of the tunica vaginalis to granulate under the application of a poultice.

The testicle is liable to active inflammation, either from causes immediately applied to it, or in consequence of the communication of inflammation through the vas deferens from the urethra. An example of the latter affection I have already spoken of, in mentioning the phenomena of gonorrhœa, under the head of *hernia humoralis*, which is simply an effect of inflammation produced in the urethra; but inflammation of the urethra, excited independently of gonorrhœa, is equally capable of affecting the testicle. The violent introduction of catheters, bougies, or any foreign substance, will produce inflammation of the testicle, constituting *hernia humoralis*. I have nothing further to say respecting the treatment.

The testicle is frequently the seat of acute inflammation, which terminates in the formation of a small quantity of matter. The testicle, however, I should observe to you, does not readily undergo suppuration; in that respect it resembles the glands of the body generally, but there is occasionally a rather acute inflammation attacking the body of the testis, in which its glandular substance becomes enlarged, and being confined by the dense, unyielding fibrous membrane surrounding it, this gives to the tumor a particularly hard and gristly feel, the scrotum becoming adherent to the surface of the inflamed testicle, and assuming a red colour, with a smooth, shining appearance. Then the inflamed glandular substance of the testis gradually makes its way through the tunica albuginea, the tunica vaginalis, and the scrotum, and appears externally in the form of a fungus. When you see this affection in its advanced stage, you conclude that suppuration of the testicle has occurred. The redness of the scrotum, and the smooth shining appearance of the integuments, are exactly similar to those of phlegmonous abscess which is approaching the surface of the body: when these have advanced to a certain extent, a degree of softness is felt in the prominent part of the tumor, and the scrotum slowly gives way by ulceration; but you find little if any matter escaping; a little thin fluid, or perhaps a small quantity of blood, flows out, and then a vascular substance, which we call (for want of a better name) a fungus, gradually presents itself at the orifice of the opening. In the commencement it has a dirty-brownish appearance, but gradually it becomes covered by granulation, so as to have a red appearance; and it presents to our view a red, fungous mass issuing out of the scrotum. In this state it is called fungus of the testis.

The essential nature of this affection then,



in the first place, is active inflammation affecting the body of the testis, enlargement of its body, with a very hard and dense feeling to the touch, in consequence of the soft, glandular substance being firmly bound down by the fibrous coat of the testicle; then the gradual protrusion of the glandular substance through an ulcerated aperture of the coats of the testis and scrotum follows. It is a kind of hernial projection of the glandular substance, constituting a red fungus, from which a copious, rather fetid discharge oozes, the basis of the fungus being surrounded by the red, inflamed, and thickened integuments, and cellular membrane of the scrotum. Now, when you first view a case of this kind, particularly bearing in mind the familiar expression (which is very commonly met with in older writers) of scirrhus and cancer of the testicle, you naturally suspect that this may be a fungus of a malignant character, and that probably the gland itself is cancerous. This, however, is not the case; the affection is quite innocent in its nature and tendency.

The fungus which thus protrudes may, after a length of time, be diminished, and the parts may skin over. This is an extremely slow process, however; and hence, under the notion more particularly that those affections were of a cancerous or malignant nature, castration has been adopted, or escharotics have been had recourse to, but these do little or no good. The proper treatment is extremely simple. You pass a double, flat-edged knife, through the fungus, on a level with the scrotum, and cut the substance away, which you find to be a portion of the glandular substance of the testis. If the swelling have been pretty considerable, including almost the whole gland, you will find that the part, from which you thus shave away the disease, will granulate over, and heal: if, however, it be less considerable, you may have to repeat the process, and then the part will cicatrize, and the epididymis and spermatic cord are left behind in the scrotum; but the testis of course is spoiled, as far as its function goes. This mode of proceeding, however, is much less serious than castration by incision through the integuments and the exposure and division of the spermatic cord. [Mr. Lawrence here exhibited a specimen; it consisted of a large fungus on the exterior of the scrotum, very obviously composed simply of the glandular substance of the testis.] I have had an opportunity of seeing a great variety of cases of this kind, and I have found the proceeding I have mentioned invariably effectual, and not attended with any unpleasant results. It is remarkable, that the glandular substance of the testis, which thus protrudes, is found to be nearly, if not entirely, insensible. On passing the knife

through the basis of the tumor, if it go merely through the glandular substance, and you do not touch the integuments, you will find that the patient hardly knows that the knife has been applied. This affection sometimes appears successively in both testes, first in one and then in the other.

The testis is liable to a number of chronic enlargements; it becomes increased in bulk, but the nature of the swelling differs in different instances. Now these were formerly called by the general term *Sarcocoele*, meaning a fleshy tumor. This term is one with which you very commonly meet in the older authors, and in Latin writers on surgery; it merely means a fleshy enlargement of the testicle, and is employed in contradistinction to hydrocele, a term which I have already had occasion to mention. *Sarcocoele* does not indicate any particular disease of the testicle; it is quite an indefinite term, and among modern writers who attempt any accuracy of definition, is very little employed.

You may have chronic inflammation of the testicle, as of any other soft part of the body—simply a vascular enlargement of the part, sometimes attended with a degree of heat and redness; in other instances, not accompanied with any obvious signs of inflammation, but shewing itself by deposition, causing an increase of bulk. This may take place in scrofulous constitutions, and the enlargement of the testicle may be of a strumous character; in such cases it may proceed to indolent suppuration, and the matter thus formed makes its way externally. In the greater number of instances, however, the chronic enlargement of the testicle does not proceed to suppuration.

If there be pain and redness, you may find it necessary to apply leeches, and adopt other parts of the antiphlogistic treatment, but you meet with a great number of instances which do not yield to treatment of that kind. In a great proportion of cases the swelling may be reduced by the active employment of mercury, either internally or by rubbing it on the inside of the thighs, so as to affect the system. A considerable proportion of the chronic enlargements of the testicle will give way to this treatment.

There are other chronic affections of the testicle which are attended with induration of the substance of the gland, arising and increasing very slowly, and perhaps involving both testicles. In some of these instances we find that the affection of the testicle has arisen from, and depends upon disease in the urethra. Stricture in the urethra, and the diseased state of that membrane which stricture indicates, are capable of affecting the testicle, and of producing chronic enlargement of it, in the same way that active dis-

ease of the urethra is capable of producing acute inflammation or hernia humoralis of the testicle. In all cases of this kind, then, it is expedient that you should carefully examine the condition of the urethra, and satisfy yourselves before you enter upon any other treatment, that that canal is in a healthy state. There are, however, many instances of chronic enlargement of the testicle, particularly where both testes are affected, in which you do not find any disease existing in the urethra, and in which you may employ the treatment ordinarily used for chronic affections of various soft parts, without producing much impression on the symptoms, where, in fact, you find that medical or surgical treatment has very little influence on the complaint. It is not necessary in those cases immediately to proceed to the operation of castration. The testicle may acquire a certain size for a long time, without producing any further inconvenience than is caused by its bulk; and when you are satisfied that the complaint is not of a malignant character, there is no occasion to proceed to so serious a means as that of removing the affected organ.

The testicle is liable to a slow enlargement, with the formation of cysts—*Cystic sarcoma*. This is a kind of swelling which, although not malignant, does not yield to surgical treatment. It is, therefore, one of those cases in which, after a length of time, if the patient be inconvenienced by the bulk, or is anxious about its nature, it may be very justifiable to proceed to remove it by an operation.

The testicle is also liable to *cancer* and *fungus hæmatodes*, the former being very rare. I only recollect some two or three instances in which I have seen a change of the testicle, which I have deemed to be of a genuine scirrhus character; and yet, if you were to form your opinion from the statements of writers on spermatic affections, you would imagine that scirrhus and cancerous affections of the testicle were very common. Fungus hæmatodes is a more common affection, and I think the name given to it has probably been derived from the appearance it exhibits in the testicle. It has been called *soft cancer*, for the tumor which is produced by the occurrence of fungus hæmatodes of the testicle is so soft, that in many cases it has been punctured under the idea that it was hydrocele.

Respecting cancer and fungus hæmatodes of the testicle, however, I have nothing particular to add to the general remarks already made. I would only observe that the result of operations in these cases has been extremely unfavourable, so that in cancer and in fungus hæmatodes of the testicle (as in the same affections of the female breast), we generally find that the operation is only

a temporary relief, and that the disease recurs either in the neighbourhood, or in some other part of the body.

The testicle is liable to a painful affection without enlargement of bulk, which I suppose may be called *neuralgia*. The pain accompanying this affection is sometimes so serious, that it renders the sufferer incapable of pursuing his ordinary occupations, interferes so much with his business and his comforts, and is so uncontrollable by any medical or surgical treatment, that patients have occasionally submitted to the operation of castration, for the purpose of getting rid of the pain and inconvenience. Sir Astley Cooper mentions, I think, that he has performed the operation of castration three times in consequence of this affection. Various local applications have been tried with very little useful result. You may cover the affected testicle with soap-plaster, or with a piece of oiled silk, to produce copious perspiration of the part, and keep it suspended. Various internal means have been tried, but generally with very little effect.

#### *Liver.*

We have hardly any thing to do surgically with the *Liver*. That part is subject to acute inflammation, which may terminate in suppuration and the formation of abscess, and the abscess thus formed may present itself externally, and require opening. This is an occurrence which seldom takes place, except in warm countries. We hardly ever see, or are called on to open, an abscess of the liver in this country. It may be necessary for you to know, however, that where symptoms have existed indicating suppuration of the liver, a tumor having formed externally, you may safely make an opening into it, and evacuate the contents. You will not, however, be in a hurry to do this. It is, of course, necessary that the liver into which the opening is made, should have become adherent to the side of the abdomen; the longer, therefore, you delay the opening, the more certain will you be that these adhesions are formed.

#### *Thyroid Gland.*

That part of the neck which is called the *Thyroid gland*, is liable to enlargement of a chronic kind, the swelling which is thus formed being technically called *Bronchocele*. In this affection there is one peculiarity; it is more common in females than in males, and takes place more particularly in some countries, or in certain districts of a country, than in others. It is endemic in mountainous districts. In this country it is found to be much the most prevalent in hilly parts—on the hills of Derbyshire, for instance;

and thus, in some parts of England, it goes by the name of the *Derbyshire neck*. In the mountainous parts of Switzerland it is very common. It is also found frequently in Tyrol, in Asia, and in the Andes. So that there seems to be something peculiar in those situations favourable to the development of the complaint.

The affection consists commonly in the formation of cells, dispersed through the texture of the thyroid gland, containing a gelatinous substance. It produces, therefore, an enlargement of the gland, which is soft to the feel, and which either occupies the whole of its lateral or middle parts, or a lateral or the middle lobe separately from the rest of the texture of the gland. I have mentioned the gland to be, in its enlarged state, generally soft; however, there is some variety in this respect, and occasionally it contains bone. [Mr. Lawrence here exhibited a piece of a completely bony texture taken out of a thyroid gland.]

The treatment of this complaint is almost completely empirical, and in this country has very commonly consisted in the administration of a curious substance, viz. *burnt sponge*; sponge burnt so as to become completely black. This nauseous remedy was administered in the form of a lozenge, and it was thought necessary that the lozenge should be placed under the tongue, and permitted to melt, in order to ensure its effects. In combination with this, it was usual, at intervals of about a fortnight, to administer a course of purgative medicines; that is, to give a dose of calomel and then an opening draught, and then to go on again with the burnt sponge. Now it occurred to a practitioner in Switzerland, where the complaint is much more common than in this country, when the substance called *iodine* was first discovered, that perhaps the burnt sponge might have been employed from its possessing this peculiar substance: he therefore tried the iodine simply, and thence the present practice arose. The treatment consists in rubbing on the external surface of the swelling an ointment containing the *hydriodate of potash*, and administering internally the iodine in tincture. Under this treatment very considerable success has been obtained in the reduction of large tumors; not, however, that we can say that the iodine is actually a specific upon which we can positively depend for removing the swelling, but we find that the treatment is effective in a great number of instances.

In some instances there is not only an enlargement of the thyroid gland, but a very active state of all the vessels leading to it; there is a great increase in the activity and size of all the vessels running through the gland, and this has led to the experiment of tying its nutrient vessels; but the gland is almost too abundantly

supplied with these for attempting such an operation; it receives four large arteries, two above and two below. However, in some instances, the operation has been attended with considerable success, particularly in a case where it was adopted by Mr. Earle, of this hospital; yet I do not know that any facts we are acquainted with shew a sufficient degree of success to induce one to recommend the operation generally. There are some cases where the swelling has been so large and so inconvenient, that extirpation has been advised, and even practised. This, I must observe to you, is a very serious undertaking, for when the swelling becomes considerable, it extends laterally, so as to become involved with a great number of important blood-vessels and nerves, and other parts about the neck; in fact, in consequence of this connexion, difficulties are presented that would cause the best anatomist and most experienced practitioner often to regard the operation as a serious and difficult one. Professor Graëfe, of Berlin, operated in a case where the swelling was so very considerable, that he thought it right to perform the operation by instalments, that is, he cut off one side of the gland first, and after waiting until that got well, he then removed the other side. He took up fifty arteries, and it appears that the patient did well afterwards:—he was very fortunate. The tumor has also been removed successfully six times by Hedenus, of Dresden.

Respecting the use of iodine, the good effects which have followed its administration in cases of bronchocele, have led to its use in a variety of other affections, under the idea that it is capable of exciting the action of the absorbents, and so removing disease; thus it has become a fashionable remedy in scrofulous and enlarged glands. Now I cannot say that I have seen such effects from it in other cases as would induce me to repose any particular confidence in it as a general means of reducing those swellings. I think it right, however, to mention to you, that there are circumstances which have led some persons to place more reliance upon it in this respect than I do myself. I have heard of one, the relation of which may, perhaps, lead you to entertain some opinion of its efficacy; it is this:—the ladies in Switzerland will not take the iodine internally, because they think it reduces the size of their breasts; if this be really the case, it would seem to be true that the remedy has some effect in exciting the absorbent vessels.



## STRYCHNIA IN AMAUROSIS.

*To the Editor of the London Medical Gazette.*

SIR,

I READ with pleasure your reports upon the subject of amaurosis, treated with strychnia, in two recent numbers of the *Gazette*; and fearing, from the very partial success which that valuable remedy there met with, that the experiment would appear to have failed, and henceforth be recorded as another instance of the incurable nature of the disease, I have ventured to request an opportunity of adding a few words to revive the idea that strychnia still holds out a prospect of real good in amaurosis.

It is now two years since a tall, stout, plethoric labourer applied to me with dimness of vision, which had been coming on for nearly twelve months; he appeared stupid, heavy, and loutish; the pulse was full; but the eyes indicated no unnatural appearance, except that the irides were tardy and very imperfect in their motion upon the admission of light. There was a dull, deep-seated, but very inconstant pain in the head.

A full bleeding, leeches, blisters, and purgatives, were as freely administered as the above symptoms appeared to warrant; but the strength suddenly gave way, and with it all vision failed. Tonics were now employed, and although the bodily health became repaired, the eyes could not distinguish even light from darkness. In this state I ordered the strychnia, in doses of one-eighth of a grain three times a day, and gradually increased it to half a grain. In five or six days the patient complained of violent <sup>flashes of</sup> light passing through the eyes and temples, with a severe pain in the head. Leeches were applied, and the latter symptoms thus relieved; but in a few days the pain recurred, and increased almost to stunning, and on several occasions the patient fell insensible on the ground. A blister was applied to the forehead, which again relieved the pain, the strychnia still being continued. Again, however, the pain returned, but a blister kept open upon the forehead effectually removed it. The flashes of light were always spoken of rather as increasing than lessening with the cessation of pain; and they at last occurred

in repetitions of four, five, and six at a time.

The result of this case was that vision gradually returned, so as to enable the patient to see the panes of glass and count fingers when between the light and his eyes. But the poor fellow grew weary of the medical discipline, and went away.

It appeared to me more than probable that, had I been able to persevere in this case, some more pointed success would have determined it. The effects upon the brain produced by the strychnia, were pain and the flashes of light; whence it would be a contradiction to infer that the benefit resulted from the blistering, or that the local depletion did more than relieve an *excessive* action excited under the operation of the strychnia: because in that case it would have relieved both symptoms.

This is certainly but an insulated case of apparent good effect, but nevertheless sufficient to induce a repetition of the trial. I would, however, recommend that the practitioner be careful how he select his case—for, since the strict pathology is not understood, we may carry a valuable remedy into disrepute from an injudicious series of experiments.

Cases of several years standing have appeared, from the little experience I have had with the strychnine, to be incapable of stimulus from that remedy; while eyes that have recently failed, or are now only contracting the disease, are very readily influenced by it. Alterations of structure are not to be regarded as fair instances for trial; but I can easily believe that parts are often allowed to degenerate into diseased structure for want of an efficient stimulus to maintain a healthy function:—by which I mean to infer, that such a remedy as the strychnia may often, in the early symptoms of that degeneration, be most beneficially applied. If, too, inflammation shall be the cause of inability in the nerve to perform its office, it becomes a question whether the stimulus of the strychnia within, and local depletion without, may not be advantageous. But every person will recognize the case already related. It appears that, in a plethoric habit, debility rather than inflammation produced the defect in the functions of the optic nerve. A sort of atony, rather than over stimulus, pos-

essed the part: and under the anti-phlogistic treatment, by which the general powers gave way, the local disease was aggravated. Here, as far as the trial has gone, it promises to be successful.

My own feeling is, that recent cases, or eyes that are failing, should, without exception, be attacked with this class of remedies, until we are assured by experience that they have no power. It would be very different, if other treatment that might be of service was being lost sight of; but in the absence of every other yet suggested, and upon the fair reasoning that every other paralyzed part of the body, even including the limbs, has been at different times restored to action, I would recommend its most perfect trial.

I am, sir,  
Yours, very obliged,  
GEORGE WICKHAM.

Andover, July 19, 1830.

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A PHYSIOLOGICAL INQUIRY  
INTO THE  
NATURE OF THE BRAIN & NERVES,

*Elucidating the Doctrine of Cullen.*

BY JOHN TUSON, ESQ. SURGEON.

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THE discussion of a question of this nature is of the most momentous and interesting consideration; it affords an extensive source for investigation, and opens a wide field for inquiry, which, when properly explored, displays a prospect comprehending the whole unbounded sphere of medical science, affording ample gratification and resources for the inquisitive mind of the philosopher, physician, and anatomist. In endeavouring to prove that the different parts of the brain are endowed with distinct and appropriate functions, and that in the different preparations of the nervous influence, nature has established a difference relative to the end she means to accomplish, I shall proceed, step by step, as far as the nature of the investigation will allow of, into matters of fact,—each observation shall be founded on fact, or rest on reasoning. It is not my object to enter into a minute anatomical description of the ner-

vous system; it is, however, essentially necessary to give a brief view of it, in order that the subject may obtain that comprehensive illustration to which its importance is so justly entitled.

The nerves are firm white cords directly continued from the medullary substance of the brain and spinal marrow, composed of fasciculi closely connected. They are the visible means that convey the *materia vitæ*, or nervous influence, to every part of the human body. They likewise convey information from the body to the mind. They consist of fine filaments not distinguishable from each other, although one filament may be for the purpose of motion, and another for sensation. Each filament is enveloped by the *pia mater*, which, when opened, appears to contain a pulpy matter, while the whole fasciculi are surrounded by the *dura mater*, extending from the brain to the extremities, ending in the muscles or skin. Each filament has its particular endowment, independently of the others that are bound up with it. The nerves possess properties quite dissimilar;—those with ganglia are the sole organs of sensation, and those without the organs of muscular motion. Some of the nervous tubes contain filaments endowed with the property of sensation as well as those of motion, and some only contain the filaments of sensation. Their origin is well known;—they are all derived from the organs within the cavity of the skull, from the medullary substance of the cerebrum and cerebellum. They are distinguishable into two kinds,—those that are to be distributed to the important organs whose action, independently of the will, is absolutely essential to life,—these are called the involuntary nerves; the nerves, on the contrary, that are distributed to less important organs—to such, for instance, whose province it is to direct our locomotive powers, subject to the control of the will, are called the voluntary nerves. The former system of nerves, viz. the involuntary, appear to arise from the cerebellum, and the other, the voluntary, seem to arise from the cerebrum. The nervous matter, therefore, of the cerebellum is of a superior quality to that furnished by the cerebrum, and the functions of the first of these organs are infinitely more important than those that are assigned to the latter. This superiority seems to be indicated by the

precaution nature has taken to secure the cerebellum from external injuries. The cerebrum, it is true, is likewise protected from them, but this anxiety of nature, in the precautions to prevent the injury the cerebrum may be exposed to, is infinitely less remarkable than those she has employed in sheltering the cerebellum from any hurt that may befall it from without. In fact, the situation of the cavities occupied by the cerebellum—the thickness of the occipital bone in those parts where external shocks might take place—the quantity of muscles that surround that part of the basis of the skull where the bone is thinnest—the tentorium that covers the cerebellum, and prevents it from suffering compression from the posterior lobe of the cerebrum—the construction of this tentorium, made with a sagacity that cannot be sufficiently admired—the speedy death which is the consequence of wounds inflicted on the cerebellum, while very material wounds of the cerebrum are sometimes not mortal;—all these circumstances, I say, contribute to give the strongest degree of evidence to the superiority we have established, and that there is a material difference both in its functions and properties. In order further to prove that the cerebrum is the source from whence muscular motion is derived, and the cerebellum the source of sensibility, we must observe that the crura of the cerebrum can be traced down into the anterior fasciculus of the spinal marrow, and the crura of the cerebellum into the posterior fasciculus, and that the anterior column of each lateral division is for motion, and the posterior for sensation. You perceive that on a division of the nerves of the anterior column, the muscles to which they are distributed lose the power of motion, and if the nerves of the posterior column are divided, the muscles to which they are distributed are deprived of their sensibility.

We will now direct our attention to the further consideration of the involuntary nerves, to elucidate this subject. These nerves consist of the *par vagum*, the *glosso-pharyngeus*, the *portio dura* of the seventh pair, the fourth pair, the *phrenic nerve*, and the *nervus accessorius*. The *par vagum* arises between the *corpora olivaria* and *restiformia*. It comes off immediately under the

*glosso-pharyngeus*. The fourth pair arises from the medullary expansion of the fourth ventricle. The *portio dura* of the seventh pair of nerves arises by medullary striæ from the point of union of the *crura cerebelli* with the *pons varolii* and *tuber annulare*. The *phrenic nerve* has its great root or origin from the third or fourth cervical nerve. The *nervus accessorius*, or spinal accessory, arises from between the two columns of the *medulla spinalis*, passes into the cranium, then makes its exit to be distributed upon certain muscles of respiration. These are the involuntary nerves. The peculiarity of these nerves is, their fasciculi are composed entirely of the filaments that are destined for the purposes of motion, none of the filaments of sensibility entering into their composition, and by their arising from a different column in the spinal marrow, they appear to be endowed with some specific and peculiar property, different from the nerves of common voluntary motion. These nerves are distributed to the heart, lungs, and stomach, and various other parts, which, whether we are waking or sleeping, are destined constantly to be in action, and in perpetual motion; they want no inclination of the will to put them so, and when so, are not governed by any power of the mind. They are in constant motion from the beginning of life to the termination of our existence; and it is ordained by the same omniscient power that has thus wisely managed, that all the parts to which these nerves are distributed, and which are in continual motion as long as life exists, should be able to perform these long-continued exertions without being susceptible of fatigue. Though there are other parts to which these nerves are distributed besides those above enumerated, that do not immediately seem of so great importance, yet it is no less certain that the cessation of their action would very soon be followed by death. If the involuntary nerves had been endowed with sensibility they would not have answered the purposes assigned them, to which, constituted as they now are, they are so admirably well fitted. If they had been governable by any power of the mind, few men would bear the various miseries and afflictions which life naturally presents, with stoic apathy or philosophic composure;—few would bear “the oppressor’s wrong, the proud



man's contumely, the pangs of despised love, the law's delay, the insolence of office, and the spurns which patient merit of the unworthy takes," as Shakespeare beautifully has expressed it; but would be induced to put a stop to the circulation and cease to breathe, terminating life and misery together, and thus gently and easily removing themselves from the unhappy scene. Nature, therefore, has wisely willed it otherwise. The consideration of the great sympathetic nerve will likewise tend to elucidate this doctrine. When we contemplate that it has numerous connexions with all the nerves of the human body—that it has numberless origins in the brain, besides being formed from the second branch of the fifth pair, and with two or three small filaments from the sixth, and that there are more ganglia in this nerve than in all the nerves of the body—in short, it forms the principal ganglionic system. Looking likewise at its variety of plexuses, their minute distribution to the viscera of the thorax, abdomen, and pelvis, and that it extends universally to all the other nerves of the head and extremities; it must appear to us a whole nervous system in itself. It seems to be almost impossible that it ever would be able to perform all its important duties, were it not for the ganglia with which it is invested. These ganglia appear to be little laboratories, or so many little brains; for their structure is such that they consist of the same matter as the brain. If we make a section of a ganglion, at first it appears homogeneous, but if it be macerated for a short time, we find that two substances enter into its composition—the one white and medullary, disposed in filaments, the other reddish, grey, and pulpy, deposited in a kind of cellular substance which is very adherent to the medullary filaments. I cannot otherwise conceive how it could be capable of performing the high offices assigned it, without the powerful aid of their ganglionic construction. In its passage, therefore, it derives these necessary supplies, for the resources of the different organs to which it is distributed, and which is essential to their existence and support. If this were not the case, how could it supply the viscera of the abdomen with nerves of the same nature as the involuntary, capable of exciting the peristaltic motion,

so essentially necessary for our preservation? or how could it administer to the various complicated objects it has to accomplish—the nutrition, the growth, secretion and circulation, and the deposition and absorption of the fluids and solids which are under its controlling influence?—or how could it minister to the vital and constitutional powers, unless it were by the means of the ganglia that are distributed through its course, bestowing adequate resources to the several organs to which it is distributed, adequate to their purposes and necessities? We must further observe, that by its being so intimately connected with all the nerves of the body, it conveys information to the brain of the various maladies to which it is liable; so that if any part of the animal economy is aggrieved, it sets up a process for its removal, and by its influential powers calls the sanguiferous system into action, and by their united operations a process is established for their removal, which, if left to their unbiassed operations, would generally be effectually accomplished. In order further to prove that nature, in the structure of this important organ, has established a difference relative to the end she means to accomplish, we will take a survey of the olfactory nerves, comparing them with the optic nerves. The olfactory arise from the corpore striata, pass through the holes in the cribriform plate, and are distributed in minute ramifications into the soft substance of Schneider's membrane, and likewise to the membrane covering the ossa turbinata. These nerves appear to be endowed with the property of smelling, and to be capable of no other impression. It has no power of bestowing sensation on its membranes; the sensibility they possess is obtained from the fifth pair. It appears therefore clearly, that the sensation excited does not relate to the body that makes the impression, but the ideas of sense are excited according to the part of the brain to which the nerve is related at its origin in the brain. The optic nerves arise from the thalami nervorum opti-corum, and from the tubercula quadrigemina, which appear to be the parts of the brain destined to receive the impression of vision. Besides these nerves of vision, this complicated organ is supplied with various other nerves—the *motores oculorum*—which are distri-

buted to all the muscles of the eye, except the superior oblique and abductores oculorum. It is necessary that these should receive other nerves endowed with motions of expression; for this purpose it has the fourth pair, or pathetic, which arise from behind the testes, in the medullary expansion which lies over the passage to the fourth ventricle, and is distributed upon the trochlearis or superior oblique muscle. The same thing may be observed of the sixth pair; and as it assists in forming the great sympathetic, it endows it likewise with its sympathising properties. Had the globe of the eye wanted nothing more than a change of motion, the third pair supplies it with filaments of a sufficient size to produce the effect. This could not answer all the designs nature required for want of sufficient activity and energy. Love, anger, joy, sorrow, pride, and contempt, which are so strongly expressed by the eye that it is with reason considered the mirror of the soul—these undoubtedly could not be expressed without the combination of the nervous influence derived from the whole of these resources. Thus, therefore, you perceive there is a nerve of vision, a nerve of motion, a nerve of expression and sensibility, and likewise for sympathy, all emanating from and arising from distinct portions of the brain, evidently confirming the doctrine that the different parts of the brain from whence the nerves originate are endowed with distinct and different properties. The pineal gland likewise, which is composed of a greyish substance, and which has two medullary threads produced from it, is it not also destined to supply some important function? The pituitary gland, the use of which we are as little acquainted with as the former, may it not likewise be the elaboratory of some nervous influence absolutely necessary for life? This may at least be presumed, when we consider all the precautions nature has taken to secure it from external injury, and from being compressed from the parts that surround it; for nature does nothing without necessity, nor without a motive; and whenever we can follow her steps, or discover them by conjecture, we find that her choice is always supported by reasons that compel us to admire and be silent; and whenever masses are formed in the brain unlike the matter of the nerves,

and which occupy a place, guarded as an organ of importance, we may presume that such parts have uses different from that of merely conveying sensation;—we may rather look on such parts as the seat of intellectual endowment, or some higher offices, beyond human comprehension to investigate. That great physician and philosopher, Dr. Darwin, has observed, where the organ of sense is totally destroyed, the ideas that were received by that organ perish along with it, as well as the power of perception; and of this he gives us a satisfactory instance that has fallen under his observation. A gentleman about 60 years of age had been totally deaf for nearly 30 years: he appeared to be a man of good understanding, and amused himself with reading, and by conversing either by the use of his fingers, or by signs made by his fingers to represent letters. He observed that he had so far forgot the pronunciation of the language, that when he attempted to speak, none of his words had distinct articulations, though his relations could sometimes understand his meaning. But, which is much to the point, he assured him that in his dreams he always imagined that people conversed with him by signs or writing, and never that he heard any one of them speak to him. From hence it appears, that with the perceptions of sounds he has also lost the ideas of them, though the organs of speech still retain somewhat of their usual habits of articulation. This observation throws some light on the medical treatment of deaf people, as it may be learned from their dreams whether the auditory nerve be paralytic, or their deafness be owing to some defect of the external ear. He says further, that he had an opportunity of conversing with two men who had been some years blind: one had a complete gutta serena, and the other had lost the whole substance of his eyes. They both told him that they did not remember to have ever dreamt of visible objects since the total loss of their sight. The learned and enlightened Cullen, whose name will be ever dear to the profession as long as memory holds its seat in this terrestrial globe, in his description of the different states between sleeping and waking, observes, that there are different degrees of excitement and collapse in the brain, that take place on different occasions, which is manifest

from the numberless phenomena of the animal economy, and that they are in no instance more remarkable than in the different states of waking and sleeping. In the latter, when quite complete, the motion and mobility of the nervous power with respect to the whole of what we call the animal functions, entirely cease, or, as he expresses it, are in a state of collapse, and are very different from a state of waking, which in healthy persons he calls a state of general and entire excitement. This difference in the state of the nervous power in sleeping and waking being admitted, he in the next place observes, that when these states are changed from the one into the other, as commonly happens every day, the change is hardly ever made instantaneously, but almost always by degrees, and in some length of time only, and this may be observed with respect to both sense and motion. Thus, when a person is falling asleep, the sensibility is gradually diminished, so that, although some degree of sleep has come on, slight impressions will excite sensations, which the same of even stronger impressions will be insufficient to produce when the state of sleep has continued longer, and is, as we may say, more complete. In like manner the power of voluntary motion is gradually diminished; in some members it fails sooner than in others, and it is some time before it becomes general and considerable over the whole.

The same gradual progress may be remarked in persons coming out of sleep: the ears in this case are often awake before the eyes are opened or see clearly, and the senses are often awake before the power of voluntary motion is recovered; and it is curious to observe, that in some cases sensations may be excited without producing the ordinary association of ideas.

From all this it clearly appears, that not only the different states of excitement and collapse can take place in different degrees, but that they can take place in different parts of the brain; or at least with respect to the different functions, in different degrees; so that if any part of the brain is not excited, or not excitable, that recollection cannot properly take place; while at the same time other parts of the brain are excited and excitable. He further states, that in order to the proper exercise of our intellectual functions, the

excitement must be complete and equal in every part of the brain; for though we cannot say that the vestiges of ideas are laid up in the different parts of the brain, or that they are in some measure diffused over the whole, it will follow upon either supposition, that as our reasoning, our intellectual operations, always require the orderly and exact recollection of ordinary ideas; so, if any part of the brain is not excited, or not excitable, that recollection cannot properly take place; while, at the same time, other parts of the brain, more excited or excitable, may give false perceptions, associations, or judgments. It will serve to illustrate this, that the collapse in sleep is more or less complete; or that the sleep, as we commonly sleep, is more or less profound; and, therefore, that in many cases, though sleep take place to a considerable degree, yet certain impressions do still take effect, and excite motions, or, if you will, sensations in the brain; but which sensations, on account of the collapsed state of so great a part of the brain, are generally of the delirious kind, or dreams, consisting of false conceptions, associations, and judgments, which would have been properly corrected if the brain had been entirely excited. How the different portions of the brain may at the same time be excited or collapsed in different degrees of force with respect to the animal, vital, or natural functions, I cannot presume to explain; but it is sufficiently evident in fact, that the brain may be at one and the same time in different conditions in respect to these functions. I must, therefore, say again, that how difficult soever it may be to explain the mechanical or physical condition of the brain in such cases, the facts are sufficient to shew that there is an inequality that may disturb our intellectual operations. Upon the dissection of bodies who had laboured under insanity, various organic affections have been discovered in different parts of the brain, and it is sufficiently probable that such organic affections might have produced a different degree of excitement in the free and affected parts, and must have in some measure interrupted the free communication between the several parts of the brain, and in other way occasioned insanity. This accounts for monomania, and the different associations that occur in insanity.



Since these observations made by the learned and ingenious Cullen, Drs. Gall and Spurzheim have been laudably employed in prosecuting this subject: their observations are of the highest importance to the profession, and the public are greatly indebted to them for the improvements they have discovered in this mysterious investigation.

In the further contemplation of the organization of the magnificent structure of the brain, nothing further remains for our observation but the investigation of the five senses, forming a medium of communication between the external creation and the sentient principle within us, making of man a living and a thinking being, which renders him capable of all those improvements that embellish and adorn his nature, each of which is in itself a secret world of wonders. These, when we attempt to explore and develop the principle by which they are actuated, our understanding traces them in vain, and we are lost in a labyrinth of inexplicable difficulties. Here, we plainly discover the *το δειον*—the hand of the Almighty; I shall, therefore, drop the pen, sound his stupendous praise, and bless the wonder-working hand of heaven.

JOHN TUSON.

Howland-Street, July 26th, 1830.

#### DISEASE OF THE MITRAL VALVE, WITH APOPLEXY OF THE LUNGS.

*To the Editor of the London Medical Gazette.*

SIR,

As this combination of disease formed the subject of a paper by Dr. Wilson, read at one of the evening meetings at the College of Physicians, you may perhaps consider a statement of a similar case worthy of an insertion in your Journal. If so, the following is much at your service.—I remain, Sir,

Your obedient servant,

THOMAS H. HOLBERTON.

St. George's Parochial Infirmary,  
Mount-Street, Grosvenor-Square,  
July 7th, 1830.

Mary Potts, æt. 38, last January twelvemonths, whilst at work, and in perfect health, was exposed to a stream of cold air, and suddenly seized with pain in the chest and difficulty of breathing,

soon succeeded by a cough. She endured these symptoms for two months before she applied for medical advice; and then, doing so, she was ordered mercury till salivation was produced: the symptoms were relieved, but not entirely subdued. In the following May she was recommended to remove into the country for change of air. At the end of July she returned home benefited, being "tolerably well" when at rest, but on exerting herself by walking up stairs, or carrying or lifting heavy weights, &c. the dyspnoea and oppression at the chest returned. She continued in this state till Christmas last, when, being worse, she applied to me for assistance. I found her labouring under the dyspnoea, a slight cough, and a trifling mucous expectoration, but no acute pain. I did not use the stethoscope; and believing it to be bronchitis, I bled her, and with considerable relief. She improved, and in the course of three weeks got up, but exerting herself beyond her strength in nursing a sick child, she speedily relapsed. The above symptoms were aggravated, and for the first time the mucous expectoration was observed to be slightly tinged with blood; and, in addition, she had scarcely any command over her speech; it faltered, and each word seemed *incarcerated*, if I may use such an expression; and she required, like a stammering person, an interval of exertion before utterance could be given. V. S. was, with the like beneficial result, used in this as in the last attack, and she again got better under the ordinary treatment. The power over her speech gradually returned, and in the course of three or four days the articulation was natural. The appetite, which before the bleeding was bad, now also became good. Carefully avoiding, as much as possible, every moral and physical exciting cause, though a great invalid, she was pretty free from any great dyspnoea or uneasiness in the chest till up to the 24th of May last, when the same character of symptoms returned, with a remarkably intermittent pulse, and a mucous expectoration again tinged with blood. I now examined her with the stethoscope, and found a distinct *bellows sound at the auricular contractions*, and over the natural situation of the right auricle; the respiration natural in the chief part of the lungs, but here and there at small portions inaudible, but no

pectoriloquy. I considered the disease of the heart to be at the *tricuspid valve*, and I thought that there might be tubercles in the lungs not yet advanced into the suppurative stage. V. S. was again had recourse to, and it produced an abatement of the symptoms. Her speech on the following day became natural, and her appetite was slightly improved, but in the course of three or four days she became worse. The dyspnœa increased with the weight in her chest, but her weakened state would not authorize a repetition of the bleeding; and other remedies failing, she gradually sunk, and died on the 8th of of June.

*Examination p.m. on the 9th.*—The right and left pleural cavities contained each two-thirds of a pint of serum. The surface of the lungs healthy; a very few and slight adhesions found to the costal pleura; their substance for the most part healthy, and the air-cells free and pervious, excepting in the situation of some hard rounded bodies, having the density and feel of glands; eight or ten of these were found, some near the surface, others deeper in the substance. Their size and structure exactly answered the description that Laennec has given of them under the head of pulmonary apoplexy. There was no cavity or other disease of the lungs sufficient to account for death, but that named.

The pericardium contained about 3ij. of serum.

*Heart.*—Right cavities healthy.

*TRICUSPID VALVE* healthy. Valves of pulmonary artery healthy. Left auricle and ventricle dilated. *Mitral valve* diseased, bound down and ossified at its margin, so that the aperture was exceedingly small, and great obstruction must have been produced, which no doubt gave rise to the bellows sound heard during life. The aortal valves rather thickened. Dr. Elliotson informs me that when he commenced the use of the stethoscope he committed a similar error, in supposing the disease to be seated in the right, when it proved, after death, to be in the left side of the heart. He accounts for it thus: that when the left ventricle is dilated without being thinner, the situation of the heart is altered; it is slightly turned round, and the left auricle and ventricle extend somewhat to the region of the right auricle and ventricle, while the latter are situated rather posteriorly;—

consequently, on opening the pericardium, the parts seen are chiefly the left auricle and ventricle.

*Remarks.*—This woman had not suspected that she had disease of the heart, until, during the last attack, I questioned her on the subject of palpitation. The quantity of blood expectorated was very trifling. It commenced about the latter end of January, under a distressed state of mind; since that time she has only occasionally, when labouring under great dyspnœa, &c. experienced a return, when she expectorated mucus tinged with blood, or a small coagulum. I have been since assured by her family, that she never spat so much as a tea-spoonful of blood at any one time. The occasional interruption of speech was a spasmodic affection of the muscles of the glottis, symptomatic of general oppression at the chest; being only present when the latter was urgent.

The heart and portions of the lungs are placed in the museum of the College of Physicians.

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## DR. CONOLLY ON INSANITY.

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*To the Editor of the London Medical Gazette.*

SIR,

I BEG leave to avail myself of the pages of the Gazette, in order to expose a piece of *critical* disingenuousness on the part of a cotemporary publication, by which the interests of others may be more affected than my own.

In a work which I recently presumed to offer to the profession, I undertook to point out some most grievous errors which prevail in the practice of medical men, with respect to persons deemed to be lunatics. My observations were designed to shew that insane persons are not sufficiently protected by the existing regulations and practice; that many persons are most improperly confined, and some as improperly left without restraint; that every eccentric man is actually in danger of being treated as a madman, whenever any selfish purpose can be answered by it; and that the general treatment of lunatics is so indiscriminate as often to be detrimental, and not unfrequently to be cruel.

Conceiving that these practical errors

were founded on erroneous opinions, which were very generally received, I entered into an inquiry concerning the real indications and characters of insanity, as distinguished from the various weaknesses, inequalities, and peculiarities exhibited by various minds in various circumstances. This inquiry was, I hope, not unbecomingly conducted, or presumptuously concluded; although I am well aware that any consideration of this kind is unimportant, compared with that of the correctness of my allegations and the utility of the suggestions and rules of practice which were appended to them. It is to the portion of my work entitled *Application of the Inquiry to the Duties of Medical Men, when consulted concerning the state of a patient's mind*, that I am chiefly anxious that those who do me the honour to look into my publication should pay some attention. If that portion contains what is reasonable and practicable, I will most willingly leave the rest of my book to be judged of by the very few who may have time or inclination to peruse the whole of it.

In two papers published in the *Lancet*, and falsely denominated a review of my work, the portion of it which is now spoken of—the practical portion of it—is not noticed or alluded to. An attempt of mine to explain in what insanity differs from sound mind, is misrepresented. Assertions are made for me which are not to be found in my book; and a confusion of terms and ideas, originating in the haste and impatience of the critic, is ascribed to the author. The illustrations given, in the application of my inquiry to practice, of the mistakes committed in legal and medical investigations, and all considerations relating to the means of avoiding them, are as much kept out of view as if I had passed them over in silence.

With the amiable motives by which the writer of the review seems to avow that he has been governed, I have nothing to do. Those who publish their opinions, or whose duties call upon them to act in public, must expect animadversion; and I am more anxious not to deserve it than to escape it when undeserved. My appeal is against the unfairness of the critic, not against the unhappy passions of the man.

The only questions which entitle me to make any appeal at all, are these:—

Are not the interests, and even the personal security of many individuals, endangered by the mistaken views of insanity yet prevalent? and are the suggestions and rules which I have laid down for the guidance of medical practitioners, likely to protect patients from improper confinement, and practitioners from the mistakes and exposures which from time to time have occupied so much of public attention?

Society has an interest in the first of these questions, by whomsoever agitated. I leave the second to the decision of my professional brethren, from whose enlightened judgment and sense of duty I yet hope for a great and most beneficial reform, in a much neglected department of practice.

I am, Sir,

Your very obedient servant,  
J. CONOLLY.

August 3, 1830.

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## MEDICAL GAZETTE.

Saturday, August 7, 1830.

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"Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."—CICERO.  
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### ST. JOHN LONG'S "SCIENCE AND ART OF QUACKERY."

MANY of our readers probably are not aware that Mr. Long's discoveries are not confined to extracting "mercury"\* from the temples, and "gold"† from the pockets of those who consult him: he has also invented an application by which he detects the most latent and obscure diseases, while yet they are in too incipient a state to have produced any symptoms. A sponge dipped in this mysterious liniment is passed over the surface; so long as the parts beneath are sound, no impression is made—but whenever the application is made over a diseased organ, or one that is about to be diseased, the skin becomes red and inflamed. We have seen and examined some

\* Vide the certificate of Viscount Ingestrie.

† Vide the testimony of divers patients.



of this precious embrocation: it contains a small proportion of turpentine with a preparation (apparently an infusion) of cantharides and some bland oil. Turpentine is also one of the chief ingredients in the vapour which his patients are now made to inhale. What may have led Mr. Long to try the effect of Spanish flies on his patients, we pretend not to guess; but as to the turpentine, it seems most probable that his familiarity with this substance during the period he unsuccessfully practised the calling of a house-painter may have suggested to him that what mixed so well with all colours would suit equally with all complexions.

While we are on this subject we shall take the opportunity of saying a few words on quackery in general, particularly with a view to satisfy the minds of certain correspondents (we suspect non-professional) who appear to be quite at a loss to account for Mr. Long's "success."

Now if by success be meant the conducting to a favourable termination a class of cases, or a greater number of them than regular practitioners are wont to do, we must crave permission first to be assured of the fact. This we prefer, because it sometimes happens that such order of proceeding saves the necessity of offering an explanation at all. King Charles asked the Royal Society to explain "why, if a vessel be brimful of water, and a large live fish plunged into the water, nevertheless it shall not overflow the pitcher." Straightway sundry members of the society cudgelled their brains for the rationale of the supposed phenomenon, till one, more slow in yielding his belief than the rest, resolved to have the evidence of his senses as to the reality of what he was called upon to explain, when, lo! the royal allegation was found to be untrue. So, doubtless, it will be with

Mr. St. John Long, when any of his proselytes are rational enough to serve him in a similar manner; we do not mean literally, that they should give him a ducking, — though some think the ablution might be serviceable, — but merely that they should coolly investigate the grounds on which his ephemeral reputation rests. Many are ready with lists of cures, but few have seen the patients, though all have heard of the recoveries. Not that we mean to say that Mr. St. John Long never stumbles upon a cure, for that were more wonderful than what he is pretends to effect, but only that those who sign his certificates and testify to his miracles are very ignorant and simple persons, who are easily taken in by him, and who are quite incapable of distinguishing between a cure and a recovery.

But, again, if by Mr. Long's "success" we are to understand the fact of his duping a great number of persons, then is the explanation very simple. "A man (says Parry) shall be grossly ignorant of the whole science of medicine, yet if he has a certain degree of assurance, aided by an adequate number of fashionable phrases, some speciousness in decorating mystery, with a determined resolution of flattering his patients by an appearance of great zeal and attachment, and by confirming the good opinion which they entertain of their own discernment, that man shall grow popular and rich under the hourly dereliction of every principle of truth, honour, and conscience, and become accessory to the daily destruction of his fellow-creatures." England, in fact, long has been the hot-bed of quacks. It is more than two centuries ago since Bacon, describing what he had observed among his countrymen, said, "The weakness and credulity of men are such as they will often prefer a mountebank, or a witch, before a learned

physician. In all times, in the opinion of the multitude, witches and old women have had a competition with physicians;—and what followeth? Even this—that physicians say to themselves, as Solomon expresseth it on a higher occasion, ‘if it befall me as it befallerth to the fools, why should I labour to be more wise?’” It is scarcely to be wondered at that this should have been the case two hundred years ago, when the sagacious mind of the great philosopher whose words we have quoted had but just pointed out to future generations the legitimate mode of conducting all scientific investigations—the method, namely, of induction; but that the experience of so many generations should have produced such prodigious changes in the intellectual attainments of the human race—should have made the peasant of the present day far more learned in all the natural sciences than the best informed among the predecessors of Bacon—should have given to all classes of society a contempt of inflated ignorance, and an acuteness in detecting imposture proportioned to the general diffusion of knowledge; that it should have done all this, as regards the other arts and sciences, and yet left “the multitude” as much as ever the prey of “mountebanks and witches,” is not more true than it is mortifying. To those who devote years of laborious study, that they may be able to practise their profession with a “learned spirit,” it is a matter of absolute amazement to witness the proceedings of the quack, who, unrestrained by the caution which springs from knowledge, assumes a confidence of tone which forms a singular contrast to the profundity of his ignorance. But if it be startling to see a man so destitute of honesty that he will undertake to practise what he has never learned, what shall we say of those who listen to such pretensions—nay, who are duped by them, and suffer

their own persons to become the subjects of his destructive operations? Indeed, stating it merely as an abstract proposition, it is so shocking to common sense that it would not be believed. Is there throughout the land any man, not under the control of the commissioners of lunacy, who would employ a lawyer to conduct an intricate cause who avowedly had never studied his profession—who affected to despise all without exception of his own calling, while he pretended to have some secret quibble applicable alike to every court and every suit?—is there any one who would entrust a valuable cargo to the guidance of a man ignorant of the first principles of navigation, and who maintained that the same course led to every country?—any one who would trust his watch in the hands of an artist who ridiculed the art of horology, and held that, whether a time-piece went too fast or too slow, or did not go at all, the evil always resulted from one and the same cause, and required one and the same remedy? Assuredly no such person is to be found: yet if a man will assert that all diseases in the human body arise from one cause—“acid matter,” and are to be cured by one remedy—the removal of such “acid matter,” he shall obtain belief, and what is more extraordinary, from the very persons who would at once see through and scorn the pretensions of our supposed lawyer, sailor, or watchmaker! Nay, a man may fail in a mechanical craft to which he has been brought up, and succeed (speaking of it as a matter of *trade*) in the most difficult and conjectural of all the sciences, that of controlling and regulating the actions of the human frame! In the nineteenth century, at a time when we are told that “the schoolmaster is abroad,” and when in other matters, certainly, miracles are held to have ceased, a man has been known to be in danger of starving as a house-painter

—to have barely existed as a cabinet-maker—and to have stepped at once into fame and affluence by informing the world on his own authority, that in certain diseases hitherto very fatal, he would cure, “in one day, any number of patients that might be offered to him, as a test”!! If a corresponding statement had been made in reference to any other branch of human knowledge, the person from whom it proceeded would have been looked upon either as a madman or a swindler, and if he escaped bedlam, would have been in danger of the treadmill.

So far as we know, every people on the face of the earth think themselves the wisest and most knowing portion of God's creatures; certainly, at least, this is John Bull's opinion of himself; and, in speaking of other nations, he always measures their grade in the scale of being by comparing them with a certain *beau idéal* which is always at hand. Now one of the traits intimately connected with this comfortable opinion of himself, is an unwillingness to be supposed capable of being humbugged, and a staunch determination, with a view to avoid this, of judging in all things for himself. To this peculiar turn of mind much of the real superiority of our national character may be attributed; but it brings with it the disadvantage of fixing many unalterably in error, for there are some things of which mankind in general have no means of judging except by the event. On the great scale, as applied to the ordinary affairs of life, there is assuredly no better criterion than this by which to estimate the prudence or imprudence—wisdom or folly, of men's actions and opinions; yet it is not of universal application with regard to any branch of art or science, and to medicine scarcely is it applicable at all—at least as the application is generally made. “The lawyer (again to quote the words of Bacon) is judged by the

virtue of his pleading, and not by the issue of the cause; the master of the ship is judged by the directing his course aright, and not by the fortune of the voyage; but the physician hath no particular acts demonstrative of his ability, but is judged most by the event, which is even but as it is taken—*for who can tell if a patient die or recover, whether it be art or accident?*”

How much wisdom there is in these remarks a moment's reflection must convince our readers. In how very few instances is the patient, or are his friends, capable of forming a correct estimate of the real skill of the medical attendant? They know that they like or dislike his manners, and for the most part they know no more. The impossibility, in the majority of cases, of bringing demonstrative evidence either for or against the skill of a medical practitioner—the difficulty, as we have before expressed it, of distinguishing between a recovery and a cure—this is the secret on which quackery fattens. In England, any man who has impudence enough to profess himself to have made “discoveries,” which render him the object of envy and persecution by the medical faculty, is sure to drive a thriving trade; but doubly fortunate is he who contrives to engage some portion of the public press in his interests: a reflection to which we are led by a recollection of the extraordinary manner in which the Literary Gazette prostituted its pages in support of Mr. Long. That some of the Sunday papers should have patronized him is nothing strange, for among these there are several which, to please their readers, must necessarily be adapted to the lowest gradations of intellect and taste; but that a periodical of such high character should have become the puffer of a charlatan, is, indeed, a curious specimen of weakness and credulity;—we say of credulity, because we see no defence for the honesty of the writer, ex-



cept at the expense of his judgment. This is a subject to which we may possibly recur—at present we have only space to add, for the satisfaction of our readers and the public in general, that the worthy Editor alluded to, who was lately tumbled into the kennel by a horse with which Mr. Long presented him, is rapidly recovering from the effects of his accident. Fortunately he was insensible at the time he was discovered, and was placed in the hands of a regular practitioner; nor have we heard of his subsequently putting himself in the way of deriving, in his own person, the benefit of those “discoveries” a trial of which he has so strongly recommended to others.

#### RECENT TRANSACTIONS IN THE IRISH SCHOOL OF PHYSIC.

It is with some reluctance we advert to certain differences which exist between the managers of the School of Physic in Ireland and the Governors of the Clinical Hospital. We had hoped they were merely of a temporary character, and accordingly abstained from comment or notice hitherto, though in full possession of all the details and particulars. But three months have now elapsed with little prospect of amicable adjustment; we, therefore, feel ourselves justified in bringing the circumstances of this ill-advised contest before our readers. In the summer of 1829 Dr. Graves proposed giving an extra-official course of clinical lectures in Sir Patrick Dunn's, but the Governors of the Hospital, for some reason or other, refused to allow him the requisite number of beds, and he was consequently obliged to relinquish his design. The plan, however, of a Summer *Clinique* was not abandoned. In the latter end of last April arrangements were made, and the regular clinical professors entered on the duties of a summer course, not only with the sanction of the College of Physicians, but with that sanction expressed in a public advertisement, signed by the registrar of the College. The lectures and attendances were proceeded with, but under considerable disadvantage; many pupils being prevented from entering their names, from an impression that there

was something irregular about the matter. The Governors, in fact, professed themselves to be taken by surprise, and were offended by what they conceived to be an encroachment on their jurisdiction; their physician in ordinary, too, complained of *his* rights being interfered with, it having been his intention, as he said, to take pupils during the summer months; and the wards being expressly reserved for him during this period of the year by permission of the Governors, of course he represents himself as an injured person. But the College of Physicians, who should naturally and properly be considered as paramount authority in regulations of this sort, conceived that in granting their permission, they were acting in accordance with the powers vested in them as the trustees and executors of Sir Patrick Dunn. In this state of things, the opinion of Mr. Saurin, ex-attorney-general of Ireland, has been sought, and it is understood to be rather in favour of the right of the Governors, to prevent, if they please, a summer course of lectures in the hospital, especially if they think it prejudicial to the interests of their officer—the physician in ordinary. Thus the question would seem to be in a great measure one between an individual and the public;—whether the plan of a summer *clinique* shall be embraced in the Dublin school, or whether the accidental privileges of an hospital physician shall be permitted to prevent its adoption. In strict abstract justice, no doubt, an individual's rights should never be molested, even with the best assured prospect of public benefit; but when the rigid observance of those rights promises after all only a precarious good, they can be insisted on with but a bad grace: a certain concession we should be inclined to think a more decorous mode of proceeding.

#### MEDICAL ESTABLISHMENT OF THE COURT.

WE understood, some time ago, that Dr. James Johnson was to be appointed one of his Majesty's physicians extraordinary; but as his name did not appear in the Gazette, we did not venture to insert it in our list. We have pleasure, however, in stating that the official omission was merely accidental, and that the appointment has actually taken place.

## PHYSIOLOGY OF THE HEART.

WE wish particularly to call the attention of our readers to the following extract from a French periodical (*Journal Hebdomadaire*, Avril 3, 1830):—

“NEW ANALYSIS OF THE HEART’S ACTION.

“*Royal Acad. of Med.*

“Sitting of the 16th of March.

“M. Oigeaux read an important paper on the Motions and Sounds of the Heart. His conclusions are:—

“1. That the sounds heard during the contractions of the heart proceed from the rush of blood sweeping along the internal parietes of the organ.

“2. It is during the diastole of the ventricles that the heart strikes with its apex against the præcordial region, and in such a manner that the impulse is *not* synchronous with the pulse.

“3. The distinct sound, usually referred to the auricles, is caused in reality by the ventricles; and the dull sound corresponds with the contraction of the auricles, not that of the ventricles.

“4. There is *no* actual repose or pause between the heart’s contraction and dilatation, and of course M. Laennec’s opinion is so far incorrect.

“A Committee has been appointed to examine into the grounds of these conclusions. Among the members we observe the names of Lermnier, Andral, père, and Kergardec.”

We know not how this paragraph has been overlooked, but the extraordinary coincidence of the statements of M. Oigeaux with those of Dr. Corrigan\*, cannot now escape general observation and inquiry. The date of the respective papers, however, will remove any difficulty that might arise on the score of claims to originality. Dr. C.’s paper was read to the Association of the College of Physicians in Ireland on the 4th of January.

## BIETT ON DISEASES OF THE SKIN.

*Psoriasis.*

IN a clinical lecture on the subject of psoriasis, M. Biett went over the dif-

ferent species of Willan (which, however, he regards only as constituting varieties of the disease), and then proceeded to speak of the treatment. It is to this latter part that we shall confine our present notice.

All the forms of psoriasis may terminate spontaneously, or under the influence of some accidental disease. Thus it is not uncommon to find it disappearing in winter or summer. In some cases it yields to some other affection—as an ague, or a subcutaneous inflammation, such as erysipelas. It rarely proceeds to a fatal issue, unless it attack an individual in the decline of life, and is accompanied by great derangement of the digestive organs. The treatment to be employed in psoriasis differs, not only according to its form, but also according to the constitution of the individual; so that, properly speaking, there is really no general method. A moderate atmospheric temperature, warm clothing—but not of flannel, for this heats the skin too much, and causes a disagreeable itching, particularly at night—frequent changes of linen, some bland lotion to facilitate the removal of the scales, a mild regimen, active bodily habits, and mental tranquillity, are so many circumstances almost indispensable to the cure of this complaint.

As to medical means, if the *P. guttata*, *diffusa*, or *inveterata*, attack a young person with a white irritable skin, abstractions of blood, emollients, and simple baths, are sometimes sufficient to remove it. But if, on the contrary, the patient is in the decline of life—if the skin be dry and wrinkled—if the function of exhalation have long been interrupted—if the eruption be of long standing, and if it be frequently renewed, the treatment ought to be entirely different: it ought to consist essentially of tonics, preparations of iron, bitters, and stimulant baths. Under such circumstances bleeding must be prescribed.

After these general remarks, M. Biett proceeded to consider some individual methods. Willis recommended purgatives—a class of medicines objected to by Willan, on the ground of the eruption in some of its forms being easily driven in. This fear M. Biett regards as unfounded, and holds the treatment by purgatives to be proper within certain limits; an opinion which he supported by a reference to numerous

\* See Nos. 127 and 135, L. M. G.

cases. Among others, he mentioned that of a young man, 24 years of age, who was admitted into St. Louis in 1825, so completely covered with psoriasis, that no sound interstices were perceptible. The scales were innumerable, conglomerated, and formed a thick layer: every movement caused fissures and rhagades, while the patient was tormented by unceasing itching. With a view of preparing him for more active treatment, M. Biett directed him to take some saline purgative for a few days. This produced so decided an improvement that the use of mild purgatives was continued without any thing else. The patient was thus completely cured in less than six weeks. Bleeding is also, too, absolutely proscribed by Willan: he has recommended preparations of sulphur, and not without reason. Various mineral waters are likewise serviceable, particularly those of Baresges, Caunterets, Bonnes, &c.; but they almost always require to be continued for a long time—one, or even two *seasons*, (that is, twenty-four or forty-eight days), are by no means sufficient to afford permanent relief. But psoriasis frequently resists these different methods, and under such circumstances the best practitioners adopt more active means. It is easy to say that the disease ought not to be cured—that it is dangerous to do so—but this opinion is the result of inexperience or ignorance. M. Biett stated that he had seen a crowd of cases of this nature completely cured by vigorous means after they had been declared incurable." The English have directed attention to the preparations of antimony and of arsenic. With regard to the former M. B. has not been able to come to any positive conclusion; but with regard to arsenic he has used it frequently during fifteen years, and has frequently seen severe cases of psoriasis removed by it, after having for years resisted other means. Fowler's solution he has found to answer best when the cases were severe, but the digestive organs in their natural state. He employs it in small doses, not exceeding fifteen drops; in larger quantities he thinks it not free from danger. Fifteen years ago he gave this preparation to a young student of medicine, whom an obstinate psoriasis, which had resisted all other methods of treatment, had reduced to despair. Without exceeding fifteen drops

for a dose, he had already obtained a rapid improvement, when he took it into his head that by augmenting the dose he would still more speedily conquer the disease. He increased the quantity to 30, 40, and even 50 drops a-day. He now wasted rapidly; a sense of burning heat was felt in the stomach and bowels. This was followed by diarrhœa; and a remarkable phenomenon, alluded to by toxicologists, was observed, namely, complete paralysis of the sexual functions. These evils, however, were transitory, while the cure of the psoriasis remains complete to the present time, a period of fifteen years. Among a multitude of cases which he might have quoted to prove the good effects of Fowler's solution in psoriasis, was that of a young man who was perfectly cured by this remedy, which case figured in the work of Mr. Plumbé, as proper to a young English physician who at that time attended the hospital of St. Louis. Among the preparations of arsenic noticed by Biett, we may mention an ammoniaco-arsenical solution introduced into practice by himself. Another remedy, of considerable power, is the tincture of cantharides, which he administers in small and cautiously augmented doses. While these various general means are adopted, it also becomes necessary, at least in many cases, to attack the disease locally by means of baths and frictions, with mercurial preparations. Even after a cure has been effected, it is extremely difficult to render it permanent without the most rigid attention to diet and regimen, and hence relapses are very common, especially among the lower orders.—*Journal Hebdomadaire*.

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#### SUCCESSOR TO M. DESORMEAUX.

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CONSIDERABLE interest has been excited lately in the medical world of Paris, by the choice of a successor to the late M. Desormeaux, as physician to the Hospital de la Maternité. A majority of the faculty addressed a petition to the Minister for Public Instruction, requesting that the candidates for the office might be elected by examination, as they were formerly. The petition was very ungraciously received, and followed by an order to the faculty



to nominate their three candidates as usual, without further delay. M. Moreau has been elected, after much intrigue and canvassing. Even some of the political journals took up the question, and strongly advocated the cause of M. Velpeau. The manner in which the election takes place, according to the present system, is this:—The professors are chosen, by the Minister “de l’Instruction Publique,” out of six candidates; three of whom are presented by the faculty, and the three others by the council of the academy.

The choice of the minister in the present instance, appears by no means to have given general satisfaction.

#### CASE IN WHICH THE CHEEK AND MOUTH WERE RESTORED BY OPERATION.

IN such cases as this—the forlorn hopes of surgery—English surgeons must certainly yield the first rank to their brethren in France, whom no difficulty seems to daunt, and whose patients seem inspired with a perseverance that sets pain and failure at defiance.

At the sitting of the Academy of Sciences on July 12th, M. Dupuytren shewed a patient, from 10 to 12 years old, in which he had succeeded in restoring the lips and a great part of the right cheek, thus filling up the void left by the loss of the lower jaw of that side. These different parts had been destroyed by a gangrenous inflammation, and the result of this great loss of substance was a hideous deformity, continual flow of saliva, prolapsus of the tongue on the neck, and impossibility of articulating. M. Dupuytren formed the design of repairing these disorders by borrowing a portion of the integuments which covered the anterior part of the neck. After having once failed, he succeeded in uniting a portion of integument with the edges of the cheek. All trace of this operation is now reduced to linear cicatrices, not very disagreeable to the eye; the tongue and saliva remain in the mouth; speech, though weak and embarrassed, is yet intelligible; but the dimensions of the mouth are so extremely small that a tea-spoon even cannot be introduced, so that mastication cannot take place, and he is obliged to live upon liquid aliments.

Notwithstanding his singular appearance, the boy has nothing revolting in his aspect, and his life is no longer an insupportable burthen, as it was before the operation.

#### HOSPITAL REPORTS.

##### GUY'S HOSPITAL.

###### *Permanent Stricture of the Urethra.*

WM. MAYTUM, aged 45, admitted into Job's Ward on the 14th April, under the care of Mr. Key.

From the patient's statement it appears he has been labouring under a difficulty in passing his urine for the last thirty years, which was followed by a spontaneous cessation of a protracted gleet of twelve months standing; he has been under the care of different medical men, and instrument after instrument introduced into the bladder, but afforded him only very temporary relief. This treatment was from time to time adopted previous to his going to France, which took place about 18 months ago. His occupation being that of a paper-maker, he went to Dieppe to procure employment. Whilst at this place he says he was in the habit of partaking very freely of wine and ardent spirits, and always experienced a greater impediment to the free discharge of the urine soon after; this at length became more permanent, and, to use his own expression, he says that he was obliged to “strain considerably” to evacuate it; and during one of these attempts the urethra suddenly became ruptured, and extravasation of urine into the scrotum and penis followed, causing these parts to swell to a considerable size. The only treatment adopted was the application of poultices and warm fomentations, whereby the swelling subsided; no instrument was attempted to be introduced by his medical attendants, and the urine continued to flow by the artificial opening, and also by the natural passage. After the swelling caused by the effusion had disappeared, an abscess formed in the perineum, which was opened, and a quantity of matter escaped, but no urine; and by the use of poultices it again healed. Having remained at Dieppe for upwards of three months, under the treatment of two medical men, he then went to St. Moris, near Paris, and was admitted into the hospital there, for the cure of the false passage and stricture. A sound was frequently attempted to be passed into the bladder, but to no purpose; the wound, however, by the application of poultices alone, became cicatrized, and at the end of five months he was discharged. The only benefit derived was the healing of the wound, and he was not required to strain so violently in the attempt to make water; he states

also that after he left the hospital, he returned to England, where he has been for the last eighteen months, and continued in about the same condition as when he left France until a month since, when the symptoms of difficulty in making water became more urgent, with occasional shiverings. Advice has been obtained from different sources, and sounds attempted to be passed through the stricture, but without accomplishing the desired effect. The shiverings have generally lasted about two hours each paroxysm, and occurred when there was the greatest difficulty in passing the urine. There is a diffused swelling in the perinæum, with a hard prominence in the centre, apparently a thickening of the bulb, attended with pain and acute tenderness on pressure; cannot sleep well at night; passes his urine at first in a very small stream, and is obliged to use exertion for the purpose; the remainder follows guttatim, there being, however, on the whole only a small quantity at one evacuation.

Ordered a grain and half of calomel and a grain of opium, to be taken every night at bed-time; and a sound to be passed down to the stricture by the dresser daily.—15 leeches to the perinæum.

19th.—The leeches have considerably relieved the pain and tenderness in the perinæum, and Mr. Key now made an attempt to introduce a middling-sized sound, but it met with firm resistance a little anterior to the bulb, and it was thought advisable not to use any force, consequently the instrument was again soon withdrawn. It was observed that the point entered the stricture, and as the sound passed onwards to reach it, it went by jerks, indicating a knotty and unhealthy state of the canal. It should have been remarked, perhaps, in a former part of the report, that on the right side of the upper part of the penis there is a small cicatrix, indicating the situation where the urethra gave way, giving rise to the urinary extravasation.

22d.—Fifteen more leeches were ordered to be applied by the dresser yesterday, and the swelling is now much less; there still, however, remains a hard substance behind;—passes urine as usual.

Ordered a blister, to be applied to the indurated part, and the sore allowed nearly to heal, when a second is to be applied, and so on—three in succession. The gums being slightly sore, the calomel and opium to be omitted.

26th.—To-day a sound was passed through the stricture with tolerable ease; it was directed to be left in that situation for half an hour, and, should shiverings come on, the perinæum to be fomented with warm water.

27th.—During last evening he was attacked with a fit of shivering which lasted about an hour, and accordingly the fomentation was had recourse to. Has also had

a paroxysm this morning. Has no pain in the perinæum, but complains of pain in the head, and the body is covered with a profuse perspiration. Passes the urine much better; pulse quick, but soft; takes a dose of house medicine occasionally.

May 4th.—Two sounds have been passed through the canal into the bladder to-day, a small and large one, without any difficulty, and there appeared to be a less knotty state of the urethra, as indicated on their introduction. The blisters have been applied as directed, and the induration and size of the swelling is considerably lessened; the urine flows in a full stream, and without being followed by any dribbling. The symptoms which were present on the 27th soon disappeared.

10th.—A large-sized sound continues to be passed daily by the dresser, with ease; and the patient observes that he is wonderfully relieved, and can now pass his urine in a perfectly full stream. There remains but very little of the swelling in the perinæum.

A few days after this report was taken he left the hospital of his own accord.

#### *Removal of two large Bursæ from the Patellæ.*

This was performed on Saturday, the 19th of June, by Mr. Key. Longitudinal incisions were made down the whole extent of the swelling, and then dissected from their situations; the wounds were afterwards brought together by strips of adhesive plaster, and rollers applied around the knees. The tumors were each about the dimensions of a moderate-sized orange, having a firm elastic feel. The right, however, was rather larger than the left, and somewhat harder, especially at the lower part, where it was firmly attached to the bone. The wounds kindly healed by first intention, with the exception of the lower part of the right, where a bread poultice was for some days applied, and that portion healed by granulations.

July 12th.—She is now able to walk about the ward, and flex and extend the limbs with scarcely any stiffness. The dressing is entirely dispensed with. Complains of slight weakness in the ankle-joints.

#### ERRATA.

In the Address to the King, in our last Number, for "during his rule of," read "during his rule over this great country;" and again, for "experience on that element which has contributed to the triumphs of Great Britain," read "which has so largely contributed," &c.

#### NOTICE.

We shall be glad to have the communication alluded to from Welton.

W. WILSON, Printer, 57, Skinner-Street, London.

# THE LONDON MEDICAL GAZETTE,

BEING A  
WEEKLY JOURNAL

OF  
**Medicine and the Collateral Sciences.**

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SATURDAY, AUGUST 14, 1830.

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LECTURES ON SURGERY,  
*Delivered at St. Bartholomew's Hospital,*  
BY WILLIAM LAWRENCE, F.R.S.

—  
LECTURE LXVIII.

DISEASES OF THE EYELIDS.—*Catarrhal Inflammation—Psorophthalmia—Lippitudo—Entropium—Ectropium—Trichiasis—Distichiasis—Tumors of the Eyelids—Ptosis—Paralysis of the Orbicularis Muscle.*

The eyebrows and eyelids are subject to wounds—to inflammation which terminates in abscess—and to the occurrence of tumors of various descriptions. The treatment of these several affections comes under the general principles which have already been explained in previous lectures. I need not, therefore, say anything further regarding it.

The eyelids are frequently subject to inflammation of a *catarrhal* character, produced by the same causes that give rise to *catarrhal* inflammation of other mucous membranes, the attack being seated in the ciliary margins, in the mucous membrane which lines them, and in the glandular bodies which form part of their substance. In this affection the edges of the eyelids, in the first place, swell—become red, hard, and extremely painful. The mucous surface of the lids is unnaturally red and vascular, and assumes a thickened and villous character, resembling, when the eyelids are everted, nearly the appearance of red velvet. The pain in this affection is very considerable, particularly when the eyelids are moved, for then the inflamed surface rubs against the globe of the eye, and if the membrane covering this be also inflamed, which it not unfrequently is in these *catarrhal* affections, the pain is so severe that the patient keeps the lids closed, and carefully avoids all attempts at moving or opening them. At the onset a feeling of stiffness and dryness is experienced, as if the lids would not move easily over the

globe; for the secretion of the mucous membrane is, in the first instance, suppressed; but that uneasiness soon gives way, because the secretion becomes in fact increased in quantity, and becomes somewhat altered, assuming an opaque whitish-yellowish appearance, approaching to that of a purulent fluid. The glands which are situated on the external surface of the inflamed membrane participate in the inflammation, and the secretion from them is either suppressed or altered in its quality, so that the edges of the lids become agglutinated during sleep, occasioning considerable difficulty in separating them when the patient awakes in the morning. Such are the symptoms of the early inflammatory stage; and as to the treatment, you will see that an affection of this nature must be combated by antiphlogistic measures. You must apply leeches to the eyelids, cooling lotions and mild unctuous remedies to the margins of the lids at night, to prevent them from sticking together, resorting also to such internal means as the state of the patient may require.

This complaint being frequently neglected in its early stage, passes into the chronic state. The swelling and redness of the eyelids abate, but there are considerable pain and itching in the ciliary margins, and the edges of the lids become agglutinated at night. In consequence of the increased quantity of secretion from the inflamed membrane, and its greater thickness, the edges of the eyelids become incrustated—there is thus an incrustation about the cilia, which unites the lids very firmly during sleep. The symptoms which attend this affection very commonly become worse in the evening;—when the patient employs the eyes by candlelight, or sits by the fire, and reads or writes, he finds that the pain and inconvenience are very considerably aggravated. Though he may have been comparatively easy during the day, he will find a good deal of pain, itching, and inconvenience, in the evening. Frequently you will find a patient with a sense of heat,



itching, and soreness, about the edges of the eyelids, and aggravation of these uneasy sensations towards night, where there is very little increased vascularity beyond a slight redness about the lids;—sometimes, indeed, you meet with instances in which the patient experiences a sense of dryness and stiffness on moving the lids, without any other signs of inflammation of the mucous membrane; this is the state which has been called *Psorophthalmia*,—in consequence of the itching sensation which accompanies it. The term is not to be understood as indicating that this affection at all partakes of the nature of itch; neither the eyelids nor eyes seem to suffer in consequence of that cutaneous disease; indeed it is well known that the itch does not usually attack the head or face, and certainly I have seen no instance, even in the most inveterate forms of the itch, and where the affection has been disseminated over the greater part of the body and lasted for a great length of time, in which the eyes have suffered from it. The term *psorophthalmia* is only to be considered as denoting the chronic form of the affection, attacking the mucous lining of the lids or palpebræ. In instances where inflammation of the palpebræ has frequently occurred—more particularly in old persons, and those in whom the skin is very delicate—the margins of the palpebræ become much excoriated and very red, the hair of the palpebræ is lost, so that the edges of the lids have a rawness, which sometimes extends to a considerable distance, presenting a very unpleasant appearance: this is particularly the case with respect to the lower lid, the whole external surface of which is sometimes raw and excoriated. This state occurs very frequently in old persons, particularly where the eyes have been exposed, in consequence of the situation in which the parties live, to smoke or acrid vapours, and where the individual, too, habitually excites the mucous membrane of the alimentary canal by unwholesome food and fermented liquors. This state is called *Lippitudo*—a term not denoting any distinct disease, but merely the excoriated and raw state of the eyelids consequent on repeated inflammation of those parts.

In the case either of *psorophthalmia* or *lippitudo* (which are merely chronic forms of one and the same affection), we must, in the first instance, if there be any appearance of active inflammation, adopt the means which are calculated to remove it, and you then find that the most successful mode of treatment consists in the application of mild stimulating and astringent remedies to the surface of the eyelids. These have the power of bringing the excoriated mucous margin of the eyelids into a better state, and also of exciting a more healthy secretion from the meibomian glands;—thus they gradually restore the edges of the palpebræ to their sound and natural condition. They are most conveniently

applied to the edges of the eyelids in the form of ointment, and that form which is most frequently employed, which perhaps is found to be most beneficial, and the use of which will nearly supersede any other remedy, is the citrine ointment—the unguentum hydrargyri nitratis of the London Pharmacopœia. This may either be employed of its full strength, or in a weaker form, by adding an additional quantity of the spermaceti cerate. I think it is better to use this of the full strength of the Pharmacopœia, if it is applied by the surgeon himself, for he takes care to touch only the diseased part of the membrane—the excoriated surfaces, or those parts on which unhealthy secretion lodges. For this purpose a small camel's-hair pencil must be employed: the ointment being softened by the fire, or the flame of a candle, a small portion of it is taken upon the pencil, and lightly carried along each lid, using only a very small quantity, and taking care that none comes in contact with the mucous lining of the eyelids, so as to touch the eye itself. The application of this ointment produces a warm and rather uncomfortable sensation of the eye, and perhaps a slightly increased secretion of tears, but those pass off, and the eyes become comparatively easy. If, however, any of the ointment gets to the surface of the eye, it produces considerable excitement—for it is an active stimulant. When, therefore, it is to be applied by any other person than the surgeon himself, it is better to use it in the milder form; let it then be reduced, by adding about two-thirds of simple cerate. The red precipitate ointment may be employed in the same manner, but it must be of less strength than is directed in the London Pharmacopœia; about one-half of that strength will be quite sufficient, applied to the edges of the lids in the same way. Other forms of ointment have also been used, but I fancy they are either inferior in their efficacy, or do not possess any superiority over those to which I have alluded. The ointment of Tannin, containing tutty powder, Armenian bole, and white precipitate with lard, has been recommended. There is another quack medicine, which passes under the name of golden ointment, containing the sulphuret of arsenic, which gives it a yellowish colour.

The effect which is produced in the eye by alteration in the state of the meibomian secretion, is often more considerable than you might at first be inclined to suppose. The inconvenience which is produced by the change of its quality is not confined simply to the agglutination of the palpebræ during the night, or the uneasy itching sensation felt at other times; but the white concrete sebaceous substance which forms becomes spread over the surface of the eye, renders the cornea dull, and obscures vision to a considerable degree. I have seen pa-

tients who, from this circumstance, have been under the impression that they were losing their sight; but on examining carefully the surface of the cornea, it was easy to see that it was only smeared over by the unnatural secretion I have mentioned, and that vision was interrupted in the same manner as light is obstructed when passing through a dirty pane of glass.

Children are subject to inflammation of the edges of the eyelids, in which there is swelling, increased redness, and great pain of the part, as I have already described, and in which the edges of the eyelids become agglutinated together during the night. But further, we very frequently find in them that along the inflamed thickened margins of the eyelids a series of small ulcers, not unlike those that take place on the scalp in porrigo, is formed round the roots of the cilia, and this has sometimes been called *Tinea of the eyelids*. These ulcerations produce a thin, transparent, yellowish, glutinous matter, which encrusts into scales round the roots of the cilia, and sometimes extends along the margin of the entire lid.

This affection, in its active state, must be combated by suitable antiphlogistic means. When the inflammatory symptoms are gone by, we must employ local stimuli and astringents, in the way I have mentioned. When the disease passes into a chronic stage, it often produces considerable thickening of the edges of the lids, elevations of their margins, and numerous yellowish crusts, formed by the secretion of the small ulcers which they cover. Under these incrustations the ulcerations extend, and loosen and detach the cilia, so that when you come to separate the scabs from the edges of the lids, you find a number of the cilia coming away with them. When the affection has arrived at this stage, your best way will be to remove the incrustations, and extract the whole of the cilia with a pair of forceps. The cilia which become loosened by the progress of ulceration are never reproduced; but those which are not yet loosened, and which you take away by force with the forceps, will grow again. When you have thus cleared the lids, you gently touch the surface with the nitrate of silver, not applying it freely or copiously, but merely touching lightly those parts of the lids which are the seat of ulceration. You may repeat this once in the course of two or three days, and in the intervals between these applications, smear the edge of the eyelids once or twice a day with the citrine ointment, as I have already described. In this way you will often find, that although the affection may have proceeded so far as to cause great thickening, with irregular tubercular elevations of the surface of the eyelids, the disease will be speedily removed; and although the cilia which have been actually lost by the exten-

sion of the ulceration to the bulbs, do not admit of reproduction, yet those that have been extracted by the forceps will be reproduced, and the natural appearance of the organ in a great measure restored.

It not unfrequently happens that the lids become either inverted—turned inwards, so as to press unnaturally on the globe of the eye; or everted—that is, their edges are turned outwards, so as to expose, in an unnatural manner, the internal surface, or mucous lining of the lids. The former is called *Entropium*—inversion of the eyelids; and the latter *Ectropium*—eversion of the eyelids.

Entropium occurs in rather elderly persons, apparently from the loose state of the skin of their eyelids. You are aware that in elderly persons the skin loses its natural tension, and falls into folds, particularly about the eyelids. If we may use the expression, the skin seems to be too long there, and the consequence is that the lids turn, or roll in upon the globe of the eye.

If you take hold of the lids with a pair of forceps, and draw up a fold of the skin, you will find that the palpebra will fit properly to the globe as before; and if you cut away a portion of this redundant skin, and unite the edges by sutures, the disease will be effectually removed. This [exhibiting it] is an instrument called the entropium forceps; it consists of a pair of forceps with two horizontal blades, by which a fold of the integuments can be taken up, when, with a knife or pair of strong scissors, you cut away the portion of the skin, and unite the edges of the wound by sutures, which you can remove at the distance of twelve or twenty-four hours, at which time the wound will be united. By means of an instrument of this kind, you can measure exactly the quantity of integument necessary to be removed, in order to bring the eyelid into its proper shape. You take up a certain portion of the integument, and then see whether the lid fits properly to the globe or not; having got the required portion, you then remove it as I have described. If you find the lid still a little inverted, then take up a little more, and remove the part in such a manner that the inferior edge (supposing you were operating on the upper eyelid) comes near to the cilia. You would be surprised to see how broad a piece of the skin it is sometimes necessary to take away in elderly people for the cure of entropium. I have sometimes taken out a portion which, when measured, has been an inch and upwards in breadth, and yet that has not been more than enough to counterbalance the tendency of the lid to turn inwards.

If the complaint have lasted some time; and in addition to the mere inversion of the lid, consequent on the loosening of the skin, there be some unnatural disposition of the tarsal cartilage to turn inwards, you may find it necessary to do something more; that

is, it may be necessary to remove a few fibres of the orbicularis palpebrarum. After cutting away the skin, you take up a few fibres of this muscle and remove them, so as to form a firmer cicatrix, which may be actually fixed to the tarsal cartilage. In this way you will generally be able to remedy entropium, or inversion of the eyelid.

There are other cases, however, which do not depend on a loose or redundant state of the integument, but on the unnatural direction and change in the form of the tarsal cartilage. Where the edge of the lid has been frequently the seat of inflammation, the cartilage becomes altered in structure; it becomes contracted, so as to press unnaturally upon the surface of the eye; it appears as if the cartilage were too short—as if it were confined to the angles of the eye, for if you make a slit perpendicularly the edges of the wound gape asunder, and the cartilage no longer presses on the eye. There is a kind of induration of the tarsal cartilage, produced by repeated attacks of inflammation, and at the same time a disposition to turn inwards and press upon the globe. The inconvenience which the patient suffers is here much more considerable than in the other case, for it is generally accompanied by the rubbing of the cilia immediately upon the eye. In the inversion which takes place from the mere looseness of the integuments, the lid forms a roll on the anterior part of the eye; but in the inversion arising from the altered direction of the edge of the tarsal cartilage, the cilia are generally directed immediately against the globe of the eye, so that the inversion is complicated with what oculists would call *Trichiasis*,—meaning an unnatural direction of the cilia, which are turned against the eyeball. The pain and inconvenience occasioned by this affection are extremely severe. In every movement of the globe, the eyelashes rub against the extremely sensitive surface of the cornea and conjunctiva, giving the patient the most acute pain, preventing him in many cases from using the eye at all, inducing him to keep the eyelids constantly shut, and to avoid all circumstances that produce motion of the lids or globe.

The friction of the cilia against the globe produces in the first place inflammation of the external surface of the eye, and the continuance of this causes deposition on the surface of the cornea, and opacity; if the affection continue, this deposition becomes so considerable that the cornea is rendered opaque, and after a time the patient becomes actually blind. If the affection be not remedied, the constant friction of the inverted cilia at last produces a change in the structure of the cornea, and diminution of its sensibility; it acquires a leathery texture externally, it loses, in a great degree, its natural sensibility, and the patient at

last, with the loss of sight, is in some measure relieved from the very severe sufferings which attend the early period of the affection.

This is an affection which cannot be relieved by simply removing a portion of the skin, nor even with the additional process of cutting away some fibres of the orbicularis palpebrarum; the effect of the cicatrix thus formed, is not adequate to counteract the disposition of the altered tarsal cartilage to turn inwards. Various means of relief have been proposed, but, according to my own experience, the most effectual is at the same time the most simple. It consists in the extraction of the inverted cilia and their bulbs. In this way you entirely remove the source of mechanical irritation to the front of the eye. If the whole of the cilia be turned inwards, you make a horizontal incision (supposing it to be an affection of the upper lid), parallel to the ciliary margin of the eyelid, and passing at least the eighth of an inch above the edge of the lid; you then proceed to cut off as much of the thickness of the ciliary edge as will include the bulbs of the cilia; and if you take away two-thirds of the ciliary margin to the extent of the eighth of an inch upwards, you will find that the whole of the bulbs of the cilia will be removed, and there is then no fear of the reproduction of the eyelashes.

You sometimes have the cilia directed inwards against the globe, without any alteration in the general adaptation of the lid; that is, you have a case of trichiasis simply, without inversion of the lid itself. In this case the affection extends only to a certain portion of the cilia. You may have an ulceration taking place on the internal surface of the eyelid, and the cicatrix of such ulceration may draw certain portions of the cilia inwards, and occasion them to press against the globe. Sometimes, without any very obvious cause, you may find one or two cilia directed perpendicularly downwards or inwards against the globe on every motion of the eye; and if even a single eyelash has this wrong direction, it occasions the greatest pain. The patient is continually putting up his finger to get rid of this apparently foreign substance. A considerable imperfection of the sight is produced by it. I have seen one or more individuals who have undergone very serious treatment, under the idea that they had amaurosis, when, on very carefully examining the eye, I have found a single eyelash—sometimes of so light a colour as to be almost transparent—turned directly inwards, and pressing against the globe. The simple removal of the eyelash under such circumstances, liberates the patient from all inconvenience.

In trichiasis, then, the cure is either palliative or radical. The palliative cure consists in removing the eyelashes that press against the eye, in drawing them out,



which can be done with a pair of forceps made with broad ends. You can easily do this, but you find that the cilia are very quickly reproduced, that the inconvenience soon recurs, and that you are obliged to have recourse again to the same mode of relief. In cases where there are several cilia turned inwards, and where the patient gets tired of submitting to the repeated inconveniences produced by them, you find it necessary to have recourse to the proceeding I have above mentioned. You dissect out a certain number of the cilia with their bulbs, and the operation is very likely to answer where there is obstinate partial trichiasis.

By writers on diseases of the eye, you will find mention made of cases where there is an unnatural internal row of cilia produced from the edge of the eyelids—a row beyond the natural and ordinary one; a case of this kind is called *Distichiasis*,—which merely means a double row. You see cases where you have an internal irregular row of cilia coming out from the ciliary margin of the eyelid close against the eye; and there are some instances where, instead of having merely a double row, you have also an additional formation of hairs on the internal surface of the lids, which presses against the globe of the eye. These cases are only to be remedied by excision of the cilia and their bulbs.

In the case of *Ectropium*, the ciliary margin is drawn outwards. It is very seldom seen in the upper lid, but is almost invariably an affection of the lower, and there the ciliary margin is drawn downwards and outwards, so that the mucous membrane is exposed to view. Obstinate cases of lippitude in old persons are frequently accompanied with ectropium. Where the edge of the lid has been excoriated, and that excoriation has extended to the common external integuments, the integument when it heals becomes shortened, and the lid is thus drawn downward. In cases of burns, the cicatrix that follows will depress the edge of the lid and turn the mucous lining outwards, so that it will be exposed to the air and the contact of foreign bodies. When this is the case, it becomes thickened, and forms a kind of fleshy prominence on the surface of the lid, which sometimes acquires an almost insensible callous surface.

Occasionally, in recent cases, you see the mucous lining of the lid nearly in its natural state, and hence has arisen the distinction between the *ectropium simplex* and *ectropium sarcomatosum*—simple and fleshy ectropium, or ectropium with a fleshy growth.

When the eyelid has been long everted, the cartilage constituting its tarsus becomes elongated, so that if the lid were liberated, and you could bring it again into contact with the surface of the eye, it would be found not to fit exactly, being rather longer than sufficient to cover accurately the surface of the eye.

In these cases of ectropium, it is found advantageous to dissect off from the exposed surface of the eyelid, the thickened portion of its mucous membrane. The cicatrix which is thus formed tends to draw the margin of the eyelid upwards, and bring it back into its natural position. Where the tarsus has become preternaturally elongated, in consequence of the long continuance of the complaint, it has been proposed (and the proceeding has been sometimes advantageously adopted) to cut out a portion of the shape of the letter V. You take out the requisite portion with a pair of strong scissors, bring the edges of the wound together, and unite them by sutures; the lid will then fit properly to the surface of the globe again.

I have mentioned that the eyelids are subject to the formation of *Tumors*, in the treatment of which we are to proceed on the same principles as in the case of tumors situated in other parts of the body. There are, however, some tumors occurring about the eyelids which are peculiar to that situation; and it is the more necessary for me to mention this, because if you were to treat them according to the principles laid down in some books, I think you would very often be considerably embarrassed. I have found it stated in books on this subject, that when tumors form on the surface of the eyelids, and become troublesome from their bulk or other causes, you must make an incision through the surface of the eyelid, expose the tumor, dissect it out, and so remove it. Now the majority of these tumors derive their origin from the tarsal cartilages, and I should be much inclined to give them the name of tarsal tumors of the eyelids; as they have not been distinguished by any particular denomination hitherto. If, therefore, you were to proceed by making an external incision, dissecting down and taking them out, you would find that you would cut through the tarsus, and make a button-hole in the eyelid. You cannot dissect them away, they grow so entirely from the tarsus. You must either cut through the tarsal cartilage altogether, or dissect them off the cartilage. Sometimes those small tumors which make their appearance externally, arise from chronic inflammation, perhaps, of a meibomian gland, which proceeds to suppuration; but the tumor arises with much tardiness, and the matter is formed very slowly.

You invert the eyelid, in the case of a small, red, slowly-formed tumor upon its surface; you will find a mark on the internal surface of the lid, shewing you the situation of the tarsus from which the tumor grows. The mode of proceeding in such a case, if the tumor be of size sufficient to cause inconvenience, is, to evert the lid, and make an opening at the point where you find the tarsus is rendered thin by the tumor.

You will then find that matter escapes from the opening, and that it is not necessary to make any external wound. In a great number of cases, the tumors which are thus formed do not exhibit a red appearance on the surface. You see a small elevation arising, either on the upper or lower lid, and sometimes on both; this gradually increases in size; the integument above is moveable, the skin slips easily over it; it grows slowly, and when you evert the lid, as in the instance of chronic abscess, there is an impression observable on the internal surface, shewing that the tarsus has been rendered thin at one part, and pointing out the spot at which the basis of the tumor is attached. In these cases then, generally, supposing you do not know exactly of what the tumor consists; if it have acquired a size by which the patient is inconvenienced or annoyed, particularly when it occurs in females, with whom a tumor of even the size of a pea, situated in that part, detracts considerably from personal beauty, the mode of proceeding is, to evert the eyelid so as to expose the internal or mucous surface, and then to make an opening with a lancet or double-edged bistoury. In such instances you will sometimes find, where you did not expect it, that pus escapes; a fluid will come out like the white of an egg; or there is, perhaps, scarcely any fluid in the tumor, which seems to be composed of a thin, easily-broken-down, vascular texture. After you have made the opening, introduce a probe, and move it about so as to break down the substance; the cavity then gradually fills up, and the external tumor shrinks, and in a short time disappears. In some instances, where no fluid escapes, you may, perhaps, find it as well—particularly if the tumor be large—to make two small punctures on the inside of the eyelid, meeting at an acute angle, cutting off the little piece of tarsal cartilage which you thus expose with a pair of sharp scissors. You thereby produce a permanent opening, and the wound is so circumstanced that granulations of the surface must necessarily ensue. By one or other of these proceedings, you will find that you can always very easily get rid of those tarsal swellings. The mode of proceeding is one of so simple a kind, that it is accomplished in about a minute, with hardly any pain to the patient, while, if you were to cut through the external surface, and the fibres of the orbicularis palpebrarum, and dissect out the tumor from the outside, a painful and troublesome operation would be engaged in, and the whole of the tumor would not be cut out, so that if, after having finished, the patient were to ask you to let him see what had been removed, you would have hardly any thing to shew. In fact, such an operation is totally unnecessary.

The upper eyelid sometimes droops, and cannot be elevated by the ordinary voluntary

exertion. The patient cannot expose the globe of the eye by the elevation of the upper lid. This has been called *Ptosis*, or falling of the eyelid. There are instances in which the upper lid droops and falls over the surface of the eye, in consequence of great distention and serious inflammation; this effect is generally removed by the natural recovery of the lid from the inflammation; but the cases to which I now allude are instances in which there has been no previous inflammation of that part, no swelling, no increase of bulk, but where the affection arises from want of power in the levator muscle; it is, in fact, a partial paralysis—a paralysis of the small muscle that should elevate the lid—the levator palpebræ superioris. This is, in fact, a paralytic affection, and it is to be treated as such.

The cause is not to be found in the eyelid itself, but in some affection of the sensorium; and the treatment will consist in the employment of such means as are calculated to relieve the sensorium.

It is much more rare to see a case in which the eyelids cannot be closed, from paralysis of the orbicularis palpebrarum. Indeed I do not recollect ever seeing any one case, where the orbicularis palpebrarum has been paralysed in the same way, in which the levator palpebræ superioris has been paralysed. All the instances I have seen of paralysis of the orbicularis palpebrarum have proceeded from affection of the nerves of the seventh pair—the facial nerves. It has happened in various instances, in the performance of operations near to that part at which the trunk of the portio dura comes out,—as in the removal of tumors situated near the inferior extremity of the parotid gland—that this nerve has been divided, or a portion of it removed, and that paralysis of the orbicularis palpebrarum, and inability to close the lids, have followed as the consequence. I have seen instances of that kind where patients, even for a number of years, have not been able absolutely to close the lids, the globe of the eye being at no time completely covered. I have seen a number of these cases, and have found the affection attended with no serious consequences so far as the eye is concerned. Patients seem to acquire a considerable power of turning the eye upwards, so that the cornea is completely covered by the superior palpebra, and, although the power of actually closing the eyelids is absent, yet a certain degree of approximation takes place. I believe, too, that in course of time the inconvenience is somewhat diminished, so that the eyelids are ultimately brought nearer together than they were in the commencement. At all events, I know that the inconvenience is limited to the mere circumstance of inability to close the eyelid accurately, and that the eye itself does not suffer in any material degree.

## LECTURE LXIX.

DISEASES OF THE EYE.—*Inflammation—Catarrhal Ophthalmia—Purulent Ophthalmia—Gonorrhæal Ophthalmia—Strumous Ophthalmia—Inflammation of the Sclerótica and Cornea—Variolous Inflammation of the Eye—Affections of the Cornea.*

IT seldom happens that the whole globe of the eye is inflamed at the same time. Most commonly either the external or the internal parts, or some particular tunic belonging to one of those divisions only, is the seat of disease. Inflammation usually commences in one particular texture of the eye, and very often it is confined throughout its progress to that particular texture, although it may extend from its original seat to some contiguous part, and, in fact, in some rare instances, to the whole of the eye. The various parts that compose the globe of the eye are extremely dissimilar in their textures, and consequently the morbid phenomena which they exhibit are very unlike each other; the treatment, therefore, which is required in inflammation affecting different parts of the eye, in many cases differs in very important particulars. You will easily understand that the changes produced in the organ are different, whether inflammation is seated in the mucous membrane of the conjunctiva, the fibrous coat of the sclerótica, the iris, or the retina; and you will be able to comprehend that these differences must require different treatment, according as the inflammation occupies the one or the other of those seats. Inflammation in either of them is certainly an inflammation of the eye—it would fall under the technical denomination of ophthalmia, but the appearance of the organ would be widely different in each instance. We cannot attempt to describe, under one head, all the inflammations that affect the globe of the eye; it would be like endeavouring to describe, under one term, all the inflammations that affect the abdomen. You will easily suppose, that if anybody were to attempt to describe inflammation of the abdomen under one term—whether it was situated in the integuments, the muscles, the serous membrane, or the various viscera—that the account would be almost unintelligible. You could not include in one description all the phenomena of diseases so essentially different; but if you were to attempt it, the account would not be more unintelligible than that which classed under the head of ophthalmia all the inflammations affecting the eye; yet this mode has been very generally employed, and more particularly by English writers. The consequence is, that you have, under the head of ophthalmia, some general observations that are applicable to no particular description at all.

I may observe to you, in the first place,

that in the treatment of inflammations of the eye, although the organ is small, and the affection may seem to be, in most respects, a local disease, capable of being arrested by simple local treatment, you will find it necessary to adopt very active measures in the early period of the case. Persons are too apt to suppose that in what is merely an “inflammation of the eye,” as it is called, it will be sufficient to employ some three, four, or half-a-dozen leeches, with a wash, and a little medicine internally. But this, in fact, is a great mistake; such a proceeding merely wastes time, and is of no benefit whatever. Inflammation attacking the very delicate textures of the eye, though not very violent, speedily produces such effects in them, that, if it be not arrested, they are rendered incapable of performing their functions, and consequently very serious changes of the parts may be thus produced. It is necessary, therefore, to adopt very active treatment, not on account of any danger to life, and in many cases not on account of any particular suffering, but to prevent those changes of structure which will afterwards impair the function of the organ, or render its delicate textures entirely incapable of performing their intended purposes. It is very often necessary, therefore, to bleed as largely from the system as would be required in inflammation of the heart or lungs, or any other important internal organ. This active treatment, in its early stage, is not only important for the prevention of injurious changes, but also to prevent the inflammation becoming seated in the eye, and assuming that form which is called chronic ophthalmia—chronic inflammation of the eye. This is nothing more than active inflammation, which has been either neglected by the patient, or inefficiently treated by the surgeon. If active inflammation be treated in a judicious manner in the early period of the affection, you never have any trouble with chronic inflammation afterwards.

The mucous membrane of the eye is liable to inflammation, which presents itself to our observation under various modifications. The general characters of inflammation attacking a mucous membrane, are, increased vascularity of the mucous surface—that is, distention and apparent increase in the number and magnitude of the vessels ramifying on the surface of the part—increased thickness of the membrane, which is principally the result of effusion into the cellular texture by which the mucous membrane is connected to the surrounding parts, so that a swelling of the membrane appears to take place—and increase in the quantity of the fluid, which is naturally poured out from the secreting surface of the membrane, with an alteration in its quality; it loses its transparency, becomes opaque and thicker,



and commonly, if the inflammation run to a considerable height, assumes a thick yellowish appearance, which is nearly similar to that of pus. These alterations are observed when inflammation attacks the external surface—that is, the mucous membrane of the eye and eyelids; for as the mucous membrane not only covers the anterior part of the eye, but also lines the internal surface of the palpebræ, the changes which attend this condition are common to the lining of the eyelids and the anterior covering of the globe of the eye.

#### *Catarrhal Ophthalmia.*

The conjunctiva of the eye is liable to a mild inflammation of a catarrhal character, produced by atmospheric causes, the same as those which produce catarrhal inflammation in other mucous membranes. This usually is a comparatively mild affection, very manageable, not proceeding to any injurious effect, unless it is either greatly neglected or very injudiciously treated. The membrane becomes red—the redness being of a bright-scarlet tint—in consequence of the distended vessels occupying the very surface of the organ. You see that the vessels of the conjunctiva are enlarged, and, being so situated, they give a bright-scarlet tint—a vivid red appearance to the eye. The mucous secretion of the conjunctiva becomes rather thick, and assumes a whitish or yellowish cast, and you can see yellow streaks of this altered secretion lying between the inferior palpebræ and the globe of the eye. Sometimes it is just sufficient to agglutinate the edges of the lids during sleep, or it may be copious enough to incrust around the cilia, and assume the form of a muco-purulent discharge from the surface of the eye itself. Very little pain attends this condition; there is a little, perhaps, in the first development of the affection, but often, although you may perceive the eye to be very red and blood-shot, the patient hardly complains, can open his eye freely to the light, of which there is no intolerance. If the complaint be more active, and pain be present, it generally assumes a peculiar character. The patient experiences a sensation as if a portion of sand, or some foreign substance, intervened between the globe of the eye and the lid. This sensation is, in fact, so deceptive, that persons can hardly be convinced that dust, or some other foreign body, has not gained admission into the eye. The cause of it is, I believe, that the vessels of the conjunctiva are in general unequally distended; they are not equally filled throughout, and the consequent inequalities on the surface produce, by mechanical friction, when the eyelids are moved, the peculiar sensation in question. If the catarrhal inflammation be very violent, there may be a little effusion into the cellular texture under

the conjunctiva covering the anterior part of the cornea, and a slight appearance of the swelling called *Chemosis*, of which I shall have to speak presently. The inflammation, however, hardly ever extends to the cornea, so that catarrhal inflammation is not attended with any serious change of the transparent parts of the eye. With this affection, particularly if it attack both eyes, there may be more or less of the fever which attends other catarrhal attacks—some pain of the head, and chilliness an aggravation at night, with a remission in the day-time.

A mild antiphlogistic treatment is proper in this kind of case—active means need not be adopted. If there should be catarrhal inflammation of both eyes, it may be requisite to take blood from the arm; but this is not generally the case: cooling lotions to the eyes, active purgatives, and, after these, salines and antimonials to determine to the skin, immersion of the feet in warm water on going to bed, and perhaps a full dose of Dover's powder at bed-time,—these are the means to be used in catarrhal inflammations of the conjunctiva, and they, or other mild antiphlogistic measures, will generally put a stop to them.

#### *Purulent Ophthalmia.*

Purulent ophthalmia, though differing perhaps from the catarrhal only in degree, is a much more serious form of the disease;—especially that form of it which has been called Egyptian ophthalmia, in consequence of its having prevailed extensively, not only in the English armies, but amongst all the Europeans engaged in the campaigns in Egypt. It is sometimes called contagious ophthalmia, from the belief that the matter from the eyes of diseased persons is capable of affecting the sound eyes of others.

In this affection there is much more active inflammation of the conjunctiva; the surface of the membrane is intensely red, from the extreme congestion of its vessels; the membrane itself becomes swelled; its texture seems to be distended throughout—hence that part of the membrane which covers the anterior portion of the sclerotic coat is raised into a large tumid ring; it surrounds, and frequently, from its size, overlaps and covers a large part of the cornea. This tumid ring is called *Chemosis*, and is produced by serous effusion into the loose cellular texture which connects the conjunctiva to the sclerotic coat. The same effusion takes place on the external surface of the conjunctiva, where it lines the lids, into the loose cellular texture which lines the eyelids themselves, and hence very considerable tumefaction of the palpebræ accompanies the affection; so considerable indeed, that the lids sometimes form large convex masses, which close, and render it very difficult to obtain a view of the eyes. In conjunction with this, a very

copious thick yellow and puriform discharge issues from the conjunctiva, flowing out between the eyelids, and running down over the surface of the lower lid and the cheeks, staining the linen of the patient. Hence it is that the name of purulent or puriform inflammation of the eye has been given to this affection.

Now this puriform ophthalmia generally commences in the lining of the eyelids, to which, for a day or two more, it may be confined. It then extends to the conjunctiva covering the globe of the eye, induces swelling of that part of the membrane, and the chemotic elevation around the cornea. So far the disease is of no very great consequence, for it is as yet confined to the conjunctiva; but if it continues, it extends to the globe itself, and to the cornea, with severe deep-seated pain in the globe, and the sensation of sand in the eye: when it thus extends it is capable of producing consequences of the most serious kind—such, for example, as sloughing, and general or partial ulceration of the cornea. This ulceration often takes place just at the edge of the cornea, extending in the form of a trench around its margin, sometimes all round, sometimes half, sometimes three parts round, sometimes penetrating the whole depth of the membrane, and going completely through into the anterior chamber, when the aqueous humour escapes, and the iris protrudes;—or there is interstitial deposition into the substance of the cornea, which is rendered opaque. Where the complaint has been checked, or has come to a natural termination without producing any of these consequences, another condition is produced of the chronic kind—the inflammation is lessened, the cornea remains clear, but the thickened conjunctiva assumes a granular surface, and is raised into small prominences, very much like the granulations of a healthy ulcer; this change is called a granular state of the conjunctiva, and takes place in the protracted stage of purulent ophthalmia. It occurs in the conjunctiva where it lines the palpebræ, and produces a mechanical irritation on the surface of the cornea whenever the globe of the eye comes against the lids. The palpebræ in their natural state are perfectly smooth and polished, but instead of this, you have now a rough granular surface moving over the eye, causing an opacity or haziness of the cornea, and also producing an enlargement of the vessels of the cornea. The granular state, then, of the lining of the eyelids, and this vascularity, are chronic consequences of purulent ophthalmia, occurring in the protracted stage of the affection.

I have mentioned to you, that this complaint has been called by some contagious ophthalmia, and an opinion very generally prevails that it really is contagious; that it is capable of being communicated from the

eyes of diseased to those of sound persons, through the medium of the puriform secretion of the membrane. It is, perhaps, rather doubtful, whether this point has been clearly ascertained, for it is difficult, or almost impossible, to make experiments on the subject. We certainly find, that under particular circumstances the complaint spreads with great rapidity through numerous individuals, that is, among the inmates of hospitals, of barracks, of prisons, of ships, and in situations where numbers of persons are crowded together. At the same time, if the patients be separated, and go to their respective families, we do not find that the disease is extended there; on the contrary, those individuals generally recover, and the complaint goes no further. It may be a doubt, therefore, whether the spreading of the complaint under the circumstances in which it has been observed to take place, and in which, during the latter part of the late wars, on the continent in particular, it was so destructive among the soldiery, that is, where it extended in barracks, camps, and so forth—it may, I say, be a doubt whether this arose from the application of a contagious discharge, or from those unfavourable effects upon health which arise when many individuals are crowded together. However, until this point shall be settled, it is certainly best for us, in practice, to act on the supposition that it is contagious; and when it exists in one individual, to separate him from others, allowing no sponges, rags, towels, or other articles that may be employed by the patient, to be used by healthy individuals.

The treatment of this affection, you will readily understand, must be of the most active antiphlogistic kind. In the treatment of it in the army, where it prevailed so extensively, it was found necessary to bleed patients very largely in the early stages, and in robust individuals, it was sometimes necessary to take thirty or forty ounces—nay, I believe it was necessary, in some instances, to take as much as fifty or sixty ounces in a very short time from the arm, and to follow up those bleedings until the inflammatory symptoms were decidedly stopped, employing all the other auxiliary means we usually have recourse to in treating very active inflammation.

It has lately been proposed, both in the treatment of catarrhal and purulent ophthalmia, instead of having recourse to active antiphlogistic treatment, to employ, in the early stages, powerful local astringents, in order to put a stop to the disease by the change which they are capable of producing in the state of the membrane, by their direct application. This plan has arisen, I believe, among gentlemen who have practised in the army, and has been particularly proposed by Mr. Melin, who was a staff surgeon for a considerable time. He says, that

in all cases of catarrhal ophthalmia of which he had the management, he used to drop into the eyes, once or twice a day, a pretty strong solution of the nitrate of silver—a solution which has varied from two to ten grains, to an ounce of distilled water—four grains have been generally used for a solution of this sort—and a drop or two of this solution once or twice in the course of the twenty-four hours has been introduced between the lids. It has been alledged, that this astringent has checked the development of the disease in its very early stages, and that there has been no necessity to have recourse to the very active antiphlogistic treatment, which is necessary where this proceeding has not been adopted. Mr. M'Kenzie of Glasgow, a very competent authority, and who has tried it in the Glasgow ophthalmic schools, has given his recommendation of the practice, in cases of catarrhal ophthalmia. He drops between the eyelids, one drop in the twenty-four hours of a solution of the lunar caustic—a solution of four grains to the ounce; he has also applied to the eyes cloths dipt in a solution of the oxymuriate of mercury—one grain of the oxymuriate to four ounces of distilled, or rose water—and to the edges of the eyelids, at night, a piece, the size of a large pin's head, of an ointment, made with twelve grains of the red precipitate, incorporated with an ounce of fresh butter. Now, if this plan of treating catarrhal and purulent ophthalmia, by the local application of strong astringents, corresponds in its effects with what has been described by those who have hitherto practised it, it will be a very great improvement in the treatment of diseases of the eye. I have not seen enough of it, in my own practice, to give an opinion on the subject; but knowing what ravages the purulent ophthalmia is capable of producing, I should be much disposed to make a trial, in the very early stages of the complaint, of this astringent plan.

New-born children are frequently the subjects of purulent ophthalmia; this has been called the *purulent ophthalmia of newly-born children*; it is, in fact, purulent inflammation attacking the conjunctiva, and exactly the same in all its essential features with the complaint, as I have described it, in the adult. It commences in the mucous lining of the eyelids, extends to the mucous covering of the globe of the eye, and, if not checked, passes to the cornea, in which it is capable of producing the effects I have already mentioned—sloughing, ulceration, interstitial deposition, and opacity. The disease is apt to be overlooked in children, for the purulent discharge agglutinates together the edges of the eyelids; the eyelids themselves are swelled, so that unless you take a good deal of trouble to examine the state of the eye, you are not

aware that the conjunctiva is at all diseased. It occurs, perhaps, in about three or four days after birth, when children are under the care of nurses and females, who usually satisfy their minds on the subject by supposing that the child has merely got a cold in the eye, and as the infant cannot express its sensations, the disease goes on without being observed, frequently producing the worst effects on the organ before our attention is directed to it. When this affection puts on its most serious form, there is not only a great tumefaction of the eyelids, but the upper lid, particularly, becomes of a bright-red colour, and a very large quantity of thick, sometimes deep-yellowish, discharge passes out from between the eyelids, staining the cap and linen of the child. Frequently the palpebræ become everted, in consequence of the efforts of the child in crying, so that ectropium is produced in addition to the other symptoms.

Now, in a case of the most serious kind, where the inflammation runs very high, where the upper lid is considerably swelled, of a bright-red and shining appearance, and where there is a large quantity of deep-yellowish discharge, it may be necessary, perhaps, to apply one or two leeches to the tumid palpebræ. Generally one leech is sufficient; a very large quantity of blood will be drawn off by one, and a great diminution will take place of the swelling;—you may purge the child actively by administering a grain or two of calomel, with magnesia or castor oil afterwards; applying saturnine lotions to the eye. Where the active symptoms are diminished by these means, or, in other cases, where the symptoms are not of an active kind, but where there is considerable swelling of the lids and a copious discharge, the treatment may be restricted simply to mild aperients and local astringents; you may keep the bowels open by castor-oil or magnesia; and apply to the surface of the eye an astringent, by means of a syringe, throwing in between the palpebræ a solution of from two to ten grains of alum to an ounce of distilled water—beginning with the weaker form; though you may generally pretty safely commence with the strength of four grains to the ounce. The local astringent is borne very well in these cases without any previous antiphlogistic treatment.

#### *Gonorrhæal Ophthalmia.*

*Gonorrhæal ophthalmia* is an affection essentially similar to the purulent inflammation of the conjunctiva. It occurs in individuals who are affected with gonorrhœa, and takes place at various periods of the complaint: not occurring, as it has been sometimes stated, in consequence of suppression of the gonorrhœal discharge (for, in the great majority of instances, the gonorrhœal dis-



charge is not suppressed), but it generally comes on when the discharge from the urethra is declining. In some cases there is reason to suppose that the discharge from the urethra has been applied to the eye of the individual, for there is a pretty clear evidence that the affection has been extended by the direct application of the discharge from the urethra in one individual to the eyes of another person. This seems to be the most dangerous mode of applying the matter, for in general it appears, that the diseased secretion from one part of one individual does not excite disease in another part of the same person. I think Hudibras was aware of this, for he says,

“No man of himself doth catch.”

However, when it is caught from others, the most serious form of conjunctival inflammation is produced. In many instances, however, this acute gonorrhœal ophthalmia arises where we cannot trace any evidence of the application to the eye of the discharge from the urethra; where it seems in them to arise from some cause that eludes our observation, or where its occurrence may, perhaps, be ascribed to some peculiar constitutional condition—something of the rheumatic kind. However, this acute inflammation of the conjunctiva is one of the most rapidly destructive affections of the eye that can possibly take place. It exhibits all the characters of the purulent ophthalmia in their highest degree. The intense redness, the extensive swelling, the chemosis, and the profuse discharge of a thick yellow fluid, just like that which is produced from the urethra in gonorrhœa, ensue, and the disease proceeds in a very short time to all its destructive effects on the cornea—sloughing, ulceration, and opacity.

In forty-eight hours, or a little more, we sometimes find the affection has proceeded to such an extent as to be out of our control. It is, therefore, of the highest consequence to adopt the most energetic treatment, as soon as we have an opportunity of treating it, though in many cases we are not called in until unfortunately it is too late to prevent the mischief. In instances where we see the patient early enough, by extremely active antiphlogistic treatment, that is, by the general loss of blood, followed up by cutting or leeches; the taking away of as much blood as you would from a person labouring under pleurisy, inflammation of the liver, peritoneum, or pericardium, by these means you may save the eye—but not by any means short of these. This is a case in which, perhaps, it might be particularly advisable to try the local astringent plan at a very early period of the affection, but, unluckily, we are not in general called in to such cases till they have got beyond that stage; and, I think, either in a case of gonorrhœal ophthalmia,

or in a case of common purulent ophthalmia, this local application of astringents would be out of place, when the disease has proceeded from the mucous surface to the globe of the eye. It is only applicable while the disease is yet confined to the mucous membrane.

I should have observed to you in the treatment of *purulent ophthalmia*, that after the active inflammatory symptoms have been removed by the treatment I have described—when the severe pain has been diminished and the swelling subdued, but a copious puriform discharge continues, the membrane having become of a less bright red, and being flabby or pale—then you may properly substitute for the active antiphlogistic treatment, the application of local astringents, and the employment of tonics internally. The solution of alum, of the nitrate of silver, and the undiluted liquor plumbi acetatis, are the best. The last is by no means too strong; it acts powerfully, but you may safely use it. After the active antiphlogistic treatment, these constitute the best means for preventing granulation of the conjunctiva, and the opaque and vascular state of the cornea which would ensue.

#### *Strumous Ophthalmia.*

The affection which is called *strumous ophthalmia*, is seated in the mucous membrane of the eye; it occurs in children. There is only slightly increased vascularity of the conjunctiva, but you see that the vessels are distended in various fasciculi, the intervening membrane being hardly altered at all in appearance. The enlarged vessels run over the cornea, and terminate in little elevations which have been called pustules, but which appear to be rather a kind of vesicle, and which proceed to ulceration of the cornea. Severe pain attends this affection, and although the eye is not much reddened, there is, in particular, a very great degree of intolerance of light. The patients, who are generally children—for it does not appear after puberty—cannot bear the slightest light; they put the muscles into spasmodic action, keep their eyes shut, put up their hands to them, run their heads into any dark corner, draw them under the bed-clothes, and express the greatest suffering whenever exposed to the light. In conjunction with this, you very frequently have other evidence of strumous disease in these patients.

The treatment here must be rather general than local. You must employ the means I have already explained for strengthening the system, and you must rely more on these than on local applications. In the first or inflammatory stage, which is often very short and hardly perceptible, it may be necessary to apply a few leeches; counter-irritation is useful afterwards, that is, the application of blisters behind the ears, or on the neck, or rubbing-in in those situations the tartar-

emetic ointment. To the ulcerations that occur in the cornea, the solution of the nitrate of silver is often applied with advantage. In this strumous inflammation, there is often a loosening or thickening of the texture of the conjunctiva, a deposition into the interstices of that membrane where it covers the cornea, and an enlargement of the vessels which supply it: the vessels becoming injected with red blood, instead of conveying colourless fluids, the transparency of the cornea is materially impaired; and in cases which have lasted for a long time, the cornea becomes covered with a loose membrane, a good deal similar to that which covers the rest of the globe of the eye: this membrane has been technically called *Pannus*. *Pannus* means cloth, and this covering is something like a piece of red cloth over the cornea. It merely consists in a very considerable change of the conjunctival covering—increased vascularity, loosening, and an opacity of the membrane.

The inflammation of the external *proper tunics* of the eye—that is, of the sclerotica and cornea—present very different appearances from those which are seen in inflammation of the conjunctiva. When the sclerotica is inflamed, its vessels are distended and increased, redness of the eye is produced; but then a pink or livid tint is presented, instead of the bright scarlet which belongs to conjunctival inflammation. In fact, the redness of the sclerotica, as seen through the conjunctiva and the coverings external to the inflamed vessels, gives the peculiar tint which I have mentioned to you. Sometimes it is of a rose colour, sometimes of a deep livid or violet colour. You observe, if you look on the surface of the eye, enlarged trunks or blood-vessels of the same tint, or violet appearance; but if you examine or trace them backwards, you will see that they soon quit the conjunctiva, and are, therefore, vessels situated between it and the sclerotic coat. In this pinky state of the sclerotica, you will find the conjunctiva but little affected; perhaps, occasionally, its vessels are slightly enlarged, but the material change in the external appearance of the eye arises from the change in the condition of the vessels of the sclerotica. This pink or livid tint of the sclerotica is observed most particularly in the form of a zone round the edge of the cornea, the posterior part of the membrane being free from it. In conjunctival inflammation, the most intense red is in the circumference of the globe; the anterior part of which is less red. The cornea receives its vessels, no doubt, from those which ramify on the sclerotica; when the latter, therefore, is inflamed, the former very readily becomes opaque. Considerable pain and intolerance of light attend this affection; the patient keeps his eyes closed. There is increased lachrymal discharge, par-

ticularly if the patient opens the eye; or while you are examining it against the light, you find a large quantity of lachrymal secretion pouring out over the under lid. In conjunctival inflammation the increased secretion is mucus, which generally assumes an opaque and somewhat puriform appearance. These are the characters of inflammation of the sclerotica:—Pink or violet tint of the inflamed membrane, pain of the eye, intolerance of light, increased lachrymal secretion, and haziness of the cornea, if it be at all involved in the attack. When this affection is very violent, and the cornea partakes in it, the vessels of the conjunctiva are rapidly distended. There is so intimate a connexion between it and the sclerotica, that the vessels of the one cannot be much distended without the other partaking of the affection, and chemosis being produced—that is, the conjunctiva swells around the margin of the cornea, the cornea loses its transparency, turns of a grey, and then of a whitish colour, matter forms between the laminae, suppuration takes place, and then ulceration on the surface; but you do not find that the matter points and discharges itself externally in a visible form, like fluid pus. In this case the yellow appearance which takes place, and which marks suppuration of the cornea, is produced by the deposition of a thick viscid matter into the interstices of the cornea; the mode in which that is got rid of is by the ulceration of the cornea at the part in which the yellow matter is situated: this process may take place on the inside, so that the yellow matter may pass into the anterior chamber, and sink to the bottom, forming hypopion. Another consequence may be prolapsus of the iris, when the ulceration extends through the cornea.

You will easily understand that the treatment of a case of this sort must be of the most active kind. You must take blood from the arm, cup, and apply leeches about the eyes, and employ all the other antiphlogistic means.

There are numerous forms of this external inflammation of the eye—that is, inflammation of the *proper tunics*—some of which are less, and some more active in their nature.

*Variculous* inflammation of the eye—that inflammation which takes place in small-pox, comes under the head I am now describing. In small-pox you have variculous pustules forming around the margins of the eyelids; and these, together with those on the external surface, are attended with great swelling and closing of the lids, and temporary blindness; the patient is as blind as if you were to tie a bandage across his eyes—yet the eye is not affected—the blindness is merely from swelling of the lids. But you may have variculous pustules form on the cornea—an affection which exposes the eye to the most

serious dangers; and you can hardly tell, perhaps, when this has taken place, because, as the palpebræ are already closed by the great tumefaction consequent on the variolous pustules, you have no means of distinctly judging of its condition. You will find, however, if the globe of the eye be the seat of inflammation, that there is a deep-seated pain in it—a sense of uneasiness on any motion of the globe—uneasiness when light is admitted; if, on the contrary, the palpebræ alone are affected, and the eye is free from disease, you have an absence of those symptoms. So that by attention to these points, you can pretty well distinguish whether the globe is the seat of variolous inflammation or not, although you cannot see it.

It happens very frequently that variolous pustules appear on the cornea, just when the scabs on other parts are falling off; their development is attended with all that inflammation of the eye which you may naturally expect from affections of this very serious kind, and it is necessary to employ very active treatment, in order to save the eye.

In measles and scarlet fever there are sometimes slight external inflammations of the eye, but they are of no very material consequence.

#### *Affections of the Cornea.*

In the cases of external inflammation of the eye, which I have now mentioned, I have had occasion to speak of certain changes produced in the cornea, and of these I have a few words more to say.

With respect to sloughing of the cornea, we have no particular treatment to adopt. If the inflammation be stopped, and the sloughing partial, the dead portion of the cornea will be separated, and ulceration will be the consequence; this may heal up, and the patient may recover his sight; or if the sloughing be more considerable, its detachment may so weaken the cornea, that it will bulge out and constitute partial *staphyloma*; but still the treatment depends on the general affection—you have no particular treatment with respect to sloughing of the cornea. If sloughing happen, considerable change will sometimes take place in the general symptoms. The hard and full pulse is exchanged for a feeble and weak one; the patient becomes pale, and symptoms of debility arise. If that change take place after the sloughing, you may deem it necessary to administer bark, and adopt a tonic course of treatment. This is frequently necessary, particularly in children, where sloughing of the cornea takes place in consequence of purulent inflammation. The most eligible form of using the bark is the resinous extract, which can be administered in doses of about six or eight grains every six or eight hours; the dose can be broken down with a spoon, and

blended with a little milk, so as to be easily administered. Ulceration of the cornea generally does very well, when the inflammatory disease that produced it is put a stop to. An idea has prevailed, that ulceration of the cornea ought to be treated by the application of the nitrate of silver; but this seems to me to be an erroneous notion. If you put a stop to the cause which produces the ulceration, it will go into a healing state, and the chasm will be repaired by the natural process. So long as the destructive process continues, you find you have the yellow dusky appearance. When the ulceration begins to present a healthy character, you have an appearance as if the bottom of the ulcer were covered by a greyish or bluish jelly—a sort of ash coloured appearance—that denotes the deposition of the new matter which is to fill up the ulcerative chasm. You observe large vessels proceeding across the cornea to the ulcer; these are active in the work of restoration, carrying the materials by which the repair is to be effected. When the ulceration, then, exhibits this greyish or bluish appearance, nothing further is necessary in the way of local treatment; you have only to keep all stimulus from the part, and the cure will be completed by the natural process.

In cases where the ulcer penetrates into the anterior chamber, and prolapsus of the iris occurs, it has been said that you should touch the parts with caustic; but this I do not think is necessary. When the iris is prolapsed, you will understand that it becomes adherent to the margin of the ulcerated cornea into which it has protruded, and although the prolapsus may recede, as far as regards its prominence, yet it adheres to the ulcerated sides of the cornea. This is called *synchia*, which merely means adhesion of the iris to the cornea.

With regard to the deposition which produces opacity of the cornea, it may either be situated on the external mucous lining, producing a greyish appearance on the surface of the cornea, and be removed when the inflammation is completely put an end to, so that the cornea will recover from its opacity (and this is seen particularly in the purulent ophthalmia of newly-born children, where you may have it at the end of inflammation of the cornea, exhibiting a light greyish tint or haziness); or, if the interstitial deposition have taken place in the texture of the cornea, or in the laminae throughout it, a dense state is produced, as if pus or lymph were effused. This is called *leucoma* or *albugo*, and is incurable.

So far as the deposition into the texture of the cornea admits of removal, it either recovers by the natural action of the absorbents, where the inflammation that precedes it has been put an end to, just as any other deposition is removed after acute inflammation is stopped; or you may assist it by dropping into



the eye a solution of the nitrate of silver. This is one of the means best calculated to favour absorption in these cases.

When the substance of the cornea has been considerably weakened by the detachment of a large slough, and by extensive ulceration, it will very commonly happen that the iris becomes adherent to that membrane on its posterior surface; and afterwards, that the secretion of the aqueous humor into the posterior chamber of the eye pushes forward the adherent iris and weakened cornea, so as to cause an irregularity in front of the eye, to which the name of *staphyloma* has been given. In cases, then, of very large ulcerations of the cornea, it is not uncommon to have this opaque irregular tumor arising on the surface of the eye, after the eye has apparently recovered—that is, when the inflammation which has been the cause of this tumor has ceased. The staphylomatous tumor consists, externally, of the thin, weakened, and protruded portion of the cornea; and internally, of the iris lining and closely adhering to it; while the cavity of the tumor is filled with the aqueous humour. If the staphyloma continue to increase, becoming more and more considerable, it presses against the surface of the eyelids, mechanically irritates them, and produces great inconvenience. The irritation thus excited very commonly affects sympathetically the opposite eye, and limits its utility very much indeed.

Under these circumstances, the only means of proceeding in our power, is the removal of the staphylomatous protrusion, by passing a cataract knife across its base, and shaving it off; the consequence of which is, that the contents of the eye are in a great measure evacuated, the tunics shrink up, the globe is reduced, the inflammation and irritation are put a stop to, and, therefore, no longer act unfavourably on the other eye by sympathetic influence.

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## MEDICAL JURISPRUDENCE.

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*A Critical Inquiry into the Validity of the Medical Evidence delivered at the late Trial of Captain Wm. Moir, before Lord Tenterden, at Chelmsford,*  
By ROBERT VENABLES, M.B. the principal (uncalled) medical witness for the defence.

THIS trial has excited no small degree of interest in the public mind, and will no doubt afford matter for painful reflection to all who have the honour and character of our profession at heart. It is not, however, my intention to dilate upon the errors of the treatment avowedly adopted; neither shall I attempt to

criticise at any length the dogmatical effrontery with which such erroneous principles were supported. Such a course would naturally belong to an essay on practical surgery; and I am willing to believe that the unanimous prescription of stimulating agents in all wounds which may be followed by inflammatory action, renders any observations upon this subject wholly unnecessary. They who have yet to commence the study of the profession, incur but little risk in the present day of contamination; and they who have already dogmatically adopted such principles of therapeutics, are too old and too blind to be convinced by the clearest evidence and the most conclusive reasoning. For instance, he who could seriously apprehend a fatal fainting while his patient was sitting up by the fire, could hardly be convinced that in syncope nature provided full security in that physical exhaustion\* through which she suppressed the further efflux of blood. What would be thought of the physician, who, being called to an internal hæmorrhage, arising from the rupture of a blood-vessel, did not instantly apply the lancet, and thus suppress the morbid effusion by the artificial abstraction of blood? or, if nature had poured out blood till, through the exhaustion of the vital powers, the hæmorrhage had ceased, immediately administered stimulants to see if he could re-induce the disease? The objects of this paper, however, are rather to impress upon the members of the profession the necessity of a closer attention, and a more intimate acquaintance with the principles and practice of medical jurisprudence; and to show, when scientifically reviewed, how inadequate the medical testimony for the prosecution in this melancholy case will prove to the attainment of its object—the satisfactory conviction of the accused.

The facts of this unfortunate case are already before the public, and require no comment upon this occasion. A bullet, from a pistol fired by the prisoner, wounded the deceased in the arm, “penetrating on the inside a little above the elbow, and passing out on the outside a little above the olecranon.” *In order to convict of MURDER*, either the wound

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\* In case of syncope from severe exhaustion, would not two glasses of brandy be calculated to extinguish rather than restore languid vital action?

inflicted must be *mortal*, or death must follow as the *pure and unadulterated consequence* of the act of the accused. In the present instance the wound was not of a mortal character, neither was it inflicted on a vital part, nor was it *obviously* the cause of death. The deceased died of trismus, and the question resolves itself into whether the locked-jaw arose from the wound or from some other cause—certainly not clearly ascertained, and probably not even looked for. The counsel for the prosecution, in his opening, expressed himself in the following remarkable terms. "It may be urged that the deceased died of locked-jaw, and not of the wound; but I think I shall be able to satisfy you that locked-jaw is often produced by a wound of any of the nerves of the arm connected with the brain, and that it was in consequence of the wound, which produced the locked-jaw, that the deceased died. The question which you have to decide is this—whether the wound inflicted by the prisoner was not the immediate cause of the deceased's death\*, and whether it does not amount to murder? If you have any doubt of it, the prisoner will have the benefit of such doubt; for my part, I have none."

I must here beg leave to differ with the conclusions of the learned counsel; for though I listened with the most anxious attention, and have since closely examined the reported evidence of the medical witnesses, I cannot discover a single tittle to support this opening, nor can I find a single allusion made to the effects or consequences of a wound of any part of the nervous system. Nor if it had been proved, would it have added to the validity of the evidence, because the object should be to prove the character of the imputed injury, and not the character of consequences which sometimes supervene upon particular descriptions of injuries.

The medical evidence of the chief professional witness for the prosecution was as follows:—

"I found the deceased at Mrs. Baker's cottage, sitting by the fire. Upon examining him, I found that he was wounded in the right arm, which was much swollen both above and below the elbow-joint, but not at the joint itself. There

was a wound on the inner side of the right arm, a little above the elbow, and also one in the opposite direction, a little above the olecranon, as if a ball had passed through; there was profuse hæmorrhage\*, but it had ceased. I called for some brandy, and gave the man a little, because he was exceedingly faint†; I then applied a piece of linen to the wound, which bled a little while I was there. Before I left I put a tourniquet loosely on the arm, explaining the use of it to the attendant‡. *There was no bone fractured.*"

After detailing the interview with Capt. Moir, the witness proceeded with the medical part of his evidence. "I returned to Stanford-le-Hope the same evening, and found that Malcolm had been conveyed there, and had borne the journey tolerably well, but was still very faint. I examined his arm again, and then put him to bed. I afterwards dressed the wound with lint dipped in oil, and bound it with two little straps; I also placed a tourniquet loosely on the upper part of the arm, in case it should be wanted; I had cold water constantly poured over the dressing, and gave him a composing draught in the evening,

\* Is the witness aware that gun-shot wounds, even when large arteries are injured, are scarcely ever attended with hæmorrhage? I have seen legs and arms completely carried off by cannon-shot, and no hæmorrhage succeeded after an interval of two or three hours. The brachial artery was the only one that could have bled profusely, and the anatomist knows that this artery could not have been wounded in the case described, because in this situation it lies on the fore-part of the arm, and under the median basilic vein, and therefore was out of the reach of a bullet taking the course described.

† Hæmorrhage having been profuse, and having ceased spontaneously, if faintness were present, was it not the means by which nature worked the suppression of the hæmorrhage? If therefore appears to have been extremely injudicious to re-excite the circulation by brandy, as such a stimulant must prove the most certain means of exciting re-action before the small vessels had permanently closed, and thus re-inducing the hæmorrhage. A little cold water, with quiet, would have answered the purpose of every inquiry which it legitimately became the surgeon to make.

‡ The application of a tourniquet, in the swollen state of the arm, was also injudicious, when left to the management of unprofessional persons, whose ignorant fears would magnify every little oozing of blood into a dangerous hæmorrhage; and if the tourniquet were screwed up tightly, its pressure on the nerve in such a state of the arm would be a much more probable cause of locked-jaw than the wound described. Tourniquets, at one time, were delivered to the soldiers, that they might apply them to a wounded limb, if it bled; but the first action proved that tourniquets in the hands of unprofessional persons, under such circumstances, was like intrusting a madman with a double-edged sword in the midst of a crowd.

\* This proposition is evidently an inadvertence on the part of counsel, because the immediate cause of death was locked-jaw.

when I thought him a little revived. I was with him next morning (Thursday) till about twelve o'clock, and continued to use the cold water. I saw him again at five in the evening, when he was not quite so well; he complained of greater pain, the limb was more swollen, and *the pulse fuller*\*. Finding that Mr. Vidal was going to attend, I sent the same evening for Mr. Robinson, a surgeon. He came, and after a consultation, we bled the man, gave him aperient medicines, and applied a poultice instead of cold water. The bleeding reduced the pulse, and we continued with him from seven o'clock till ten, when he appeared rather better. On Friday morning, Mr. Vidal, a surgeon of Aveley, came to my house, and we went together to see Malcolm. I stated to Mr. Vidal what course I had pursued; *he said he could not improve the treatment*, but merely suggested, if bleeding were again necessary, to reduce the patient with leeches instead of the lancet. I continued to visit Malcolm daily, and Mr. Robinson also occasionally attended. Malcolm continued to get better till the following Tuesday. I had seen him on that day at twelve o'clock; I saw him again at half-past twelve at night, when I found he was labouring under locked-jaw. I sent for Mr. Robinson, who came and saw him early the next morning; and Mr. Vidal, whom I also sent for, came in the afternoon. The symptoms continuing unfavourable, I was in attendance the whole of Wednesday, and between two and three o'clock on Thursday morning the man died."

*Cross-examined by Mr. Gurney.*—"On my arrival at Baker's cottage, the bleeding had stopped†. I did not administer the brandy to Malcolm in order to see whether the main artery was wounded, but I did it to see whether the hæmorrhage would return; I also ordered him some brandy on the road, if he appeared faint. I paid for one glass, which he had on the road to Stanford; I also ordered

him some on the Saturday\* and Sunday evening, and he had more after the locked-jaw took place. By Capt. Moir's directions, I supplied the deceased with food from my own table; he had gruel every night, and perhaps *he might have had brandy in it*; the nurse once asked me if she might put a little brandy in his gruel, and I told her, just enough to flavour it."

*Re-examined by Mr. Broderick.*—

"The distance from Mrs. Baker's cottage to my house is about five miles; my object at first in giving him brandy was to see whether the hæmorrhage would return, for if it had, he could not have been removed‡: during the time I attended Malcolm, I never saw him excited by taking spirits."

*Mr. John Robinson examined by Mr. Round.*—"I am a surgeon at Orsett, about three miles from Stanford-le-Hope. On the 18th March Mr. Dodd sent for me to see a person at Stanford: I went about seven or eight o'clock and saw Malcolm; I looked at his arm, but did not take off the BANDAGE‡. Mr. Dodd informed me what he had done, and I considered his mode of treatment perfectly judicious; I recommended a poultice over the dressing instead of the cold water; Mr. Dodd also bled him in my presence, which reduced the pulse§—the hardness of the pulse;

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\* The witness here made a most important statement, though not reported—namely. "as suppurating had commenced, brandy became necessary to support his strength under the discharge." Will any authority of character assert that any suppurating requiring support by brandy, or other exciting remedies, could possibly succeed to a simple gun-shot flesh wound in the arm in the course of three days—from Wednesday to Saturday evening? The thing is morally impossible.

† Then I would inquire how men are removed from the field of battle after being wounded, and frequently transported to hospitals, leagues in the rear, without any untoward accident. A knowledge of anatomy would have informed him of the arteries exposed to danger from such a wound, admitting that he had no experience of the fact that gun-shot wounds are seldom or never followed by primary hæmorrhage. The observation, as made, seems almost destitute of common sense.

‡ This is the first mention made of bandage. Now what could be the object of a bandage? Was this bandage applied tightly—was it stiff and hard with dried and coagulated blood, and thus a great source of constitutional irritation—and was the object of the poultice to soften this bandage, and render its removal practicable? These are questions to which I require no answer; the commentary I leave to the conscience and the closet.

§ This is a most extraordinary code of therapeutics. On Wednesday evening the patient is sinking from the physical exhaustion brought on by profuse hæmorrhage, and it becomes necessary to ply him with brandy to prevent his escape

\* It is difficult to conceive how it could never occur to the individual charged with the management of this case, that these symptoms were the genuine consequences of the stimulants previously administered. They are what every man, the least acquainted with the principles of therapeutics, would naturally anticipate from such means.

† On the inquest, it was stated that the cessation of the hæmorrhage proved that the main artery was not wounded. This dogma has no foundation whatever. The real proof is, that the artery was not in the course of the wound.



I saw the man again about the middle of the day on Saturday; the arm was still bleeding, from leeches having been just applied; I saw the wound then for the first time; it was looking moist, and there was *more disposition* to suppurate, which was desirable. I saw the man again on Sunday, he was then looking well; I saw him again on the Wednesday, with Mr. Dodd, when I found that locked-jaw had taken place. I then considered his life in great danger; there was not a chance for him. I have no doubt the wound was the cause of the locked-jaw\*.”

*Charles Lewis Vidal examined by Mr. Broderick.*—“I am a surgeon at Avelley. On the Friday after the transaction, I saw Malcolm. I was informed of the treatment which had been pursued, and I consider it was proper and judicious. He was better on the Friday morning than I could have expected to have seen him. I recommended leeches. The treatment after I saw him was also judicious and proper. *I never saw but one case of gun-shot wound before*†. The cause of the locked-jaw was the wound, and the cause of death was the locked-jaw.”

*Dr. George Adams examined by Mr. Broderick.*—“I am a physician at Birlincay, and have been in practice upwards of forty years. I was at one time a surgeon in the navy, *but have not had much experience in gun-shot wounds*‡. I have heard the evidence which has been given regarding the treatment of Malcolm, and, in my judgment, the course pursued was proper and judicious.”

Having thus transcribed the whole of the medical evidence for this important prosecution, I shall now proceed to inquire into its validity, as supporting so serious a charge. From the pains

from existence. On the following day it becomes necessary to bleed, to bring down the fulness and hardness of the pulse. Thus we have profuse hæmorrhage, physical exhaustion—brandy; vital reaction, full hard pulse, and—venesection, all huddled together into a most harmonious system of compatible anomalies.

\* This amounts to no more than a dictum, for there are no grounds given for the opinion. These things are managed better in Scotland, and, indeed, in all other countries than this. When questions of science require to be expounded, to assist in the administration of criminal law, they are always referred, on the part of the Crown, to individuals of known character and acknowledged competency.

† Were three glasses of brandy administered in this case immediately after the infliction of the wound—and if so, what was the result?

‡ Has he had any at all, and to what extent?

taken by the prosecution to establish the correctness and propriety of the treatment\*, I am almost bound to alter the opinion which I had formed—that the good or bad management of the case makes no difference in a charge of this kind. I always considered it as an established rule of law, that if one individual inflicted a wound or injury upon another, he must take the consequences under all the circumstances; and if he were so unfortunate as to select the neighbourhood of the most ignorant of village apothecaries, he is equally responsible, whether the treatment be skilful or unskilful, successful or unsuccessful; it being his own fault that he did not select the proximity of a Brodie or a Cooper. If I did not continue still to entertain my original opinion, I should be tempted to ask, in what author the principles of practice adopted have been laid down, or what authority, or what precedent, could be advanced in modern days for such rules of therapeutics as those advanced? But the consequences of this unhappy treatment have been rendered but too apparent by the evidence in support of it. It was distinctly stated by the witnesses, that the pulse, on the Thursday, was both *full and hard*, and required venesection for the reduction of these symptoms. Now, fulness and hardness of pulse are characters distinctive of inflammation; and we know of no more powerful or effectual means of exciting inflammatory action than the ingestion of stimulating agents, even in the quantities allowed by the witnesses in this unfortunate transaction. I could enlarge upon this subject, but as I believe the rule of the law in the present day is, that mismanagement by the medical attendant, as it tends not to diminish the guilt, neither does it lessen the responsibility nor exculpate the prisoner†. Though I fully acquiesce in the propriety of this rule, yet surely it will make some difference when the medical attendants—confessedly ignorant and in-

\* Is it not surprising that they did not call some army or navy surgeon, who had seen practice of this description? The confirmation of one such individual would have been worth a whole host of such as were called. But as confirmation of this sort would have been valuable, so, no doubt, it was difficult to procure.

† Hale lays it down, that if a wound be inflicted, not necessarily mortal, and that if the wounded person die, not of the wound, but of the mismanagement, the prisoner cannot be attainted of murder.

experienced in the nature of the injuries to which they called to administer—deviate from the established principles of practice to adopt a mode of treatment proscribed by the universal consent of all competent authority, as not only injudicious but highly pernicious, and as calculated to ensure the worst results. It would, indeed, be a monstrous principle of criminal jurisdiction, that the accused must not only answer for his own acts, but also for consequences which, by possibility, might originate in mercenary or even malicious motives. This would be to expose such unfortunate individuals as the object of this prosecution to the operation of the worst feelings of our nature, and to leave them the victims of the basest passions of the human heart. When, therefore, the medical attendants called upon to administer to an injury deviate from the established rules of practice, to adopt a line of treatment not only unsupported, but proscribed, by all competent authority, and this, too, without any personal experience to justify such a dereliction, it should be received as an abstract principle of jurisprudence that such dereliction be sufficient, if not to exculpate, at least to extenuate the guilt of the prisoner.

To convict of the crime of murder, the accused must not only have raised the hand in malicious violence against the life of a fellow-creature, but the fatal result must be clearly and unequivocally proved to be the consequence of his act. In the case under consideration, the deceased died of locked-jaw, not of the wound. It is true that the medical witnesses declared the wound the cause of the locked-jaw. But to what does this opinion amount?—To a mere *dictum*; the *dictum*, too, of persons whose united experience could muster only one gun-shot wound. Upon what grounds was this opinion advanced? Certainly not from having frequently witnessed such a consequence in the course of their experience.

It is a well-known fact, that punctured and lacerated wounds are the most frequent causes of traumatic tetanus. But a simple gun-shot wound\* in this country, and in the month of March, probably would seldom or never

be followed by tetanus. When tetanus supervenes on a gun-shot wound of an apparently simple character, it arises from the bullet having become jagged, or ragged, and thus tearing or lacerating the nerves, tendons, or ligaments, in the neighbourhood through which it passes\*. A smooth spherical bullet cannot by any possibility cause such a laceration; for, on meeting with such parts, they, by their elasticity, either escape from the direct force of the projectile, or give to it a different direction.

In the opening, the counsel for the prosecution stated, that he would satisfy the jury that locked-jaw is often produced by a wound of any of the nerves of the arm connected with the brain. I shall not descend to quibble upon the correctness of this proposition, but merely ask why the attempt should be made? If established, it would have proved nothing in this case, nor tend in the least to clear it from the mist and obscurity in which it was unhappily involved. It would have been of far greater importance, and infinitely more satisfactory, to prove that a nerve had been wounded, or that a ligament or a tendon had been lacerated. But the counsel for the prosecution was a man of too much penetration not to see that he was wholly deficient upon this point, and that, through the supineness of his evidence, the only means—a post-mortem examination—of qualifying him upon this question, and ensuring a satisfactory verdict, had been most injudiciously and most unaccountably neglected. Nay, some friends even of the prisoner, as I have been informed, were refused permission to institute this inquiry. I shall not stop to inquire what may be the legitimate inference from such a fact, but surely it cannot tend to criminate the prisoner.

What, then, does the bare assertion, that the wound was the cause of the locked-jaw, amount to more than a mere *dictum*? Gun-shot wounds, even in this climate, are occasionally, though rarely, followed by tetanus as a consequence. But this is no proof that the tetanus in this case was the consequence

\* By a simple gun-shot wound, I mean one not complicated with fracture, or the laceration of nervous tendons or ligaments.

\* I of course presume the treatment judicious; but no man of judgment and experience would undertake to say that such treatment as that admitted might not induce trismus in any wound, however improbable such a consequence otherwise.

of the wound, even had the injury been proved to be of the description which would render such a consequence possible, or even probable: I mean an injury complicated with a fractured bone\*. But neither possibilities nor probabilities are receivable as proofs in courts of law, where positive evidence can be obtained. Upon this principle, the whole medical evidence in this case is invalid. Tetanus succeeds a gun-shot wound perhaps once in two or three hundred times; and therefore it is two or three hundred to one against the correctness of the *conclusion* advanced, or rather opinion, for a conclusion is founded upon some one or more antecedent propositions.

I had a case at the Royal Ordnance Hospital at Valenciennes, in France, in which the patient, while labouring under delirium tremens, from drunkenness, was seized, shortly after his admission, with opisthotonos, which continued for some hours; and Dr. Christison relates an instance of a boy, in the hospital at Edinburgh, who, having drank some whiskey at the instigation of an acquaintance, was seized with coma, which was interrupted with alternating opisthotonos and emprosthotonos. Now opisthotonos, emprosthotonos, and trismus, or locked-jaw, are mere modes of tetanus; and upon these grounds, myself and Dr. Christison, had he been present, would have been as fully warranted in attributing the locked-jaw to the brandy administered, as the evidence in attributing it to the wound; and *we* should have had this advantage—that we should have concluded from the confirmations of personal experience; but in the instance under consideration, the opinion was advanced without any experience whatever.

But there is another point of view in which this subject deserves consideration. Tetanus is sometimes brought on by syphilis; it arises from worms, and other intestinal irritations†. It arises,

\* Even such an injury would not fully justify the conclusion. The nature of the injury, and the anatomical structure of the parts wounded, should have been ascertained.

† Ardent spirits sometimes produce a degree of vascular derangement or irritation in the mucous membrane of the stomach, which it is easy to conceive might become a cause of tetanus. This pathological fact will cause no difficulty with those who are acquainted with the nature and causes of the trismus nascentium—a peculiar species of locked-jaw which attacks children, from irritating matter in the bowels.

as an idiopathic disease, from exposure to cold while the body is heated, and from the ingestion of cold fluids—even cold brandy—while the temperature of the animal body is greatly increased; or during the prevalence of moral or physical excitations. The trismus might, in the present case, as well have arisen (and more probably, too) from a nail in the sole of the shoe pricking the foot, or from a splinter from the pole running into the hand; and, indeed, such a presumption is not wholly unfounded, as I have since examined the pole, and, from its splintered state, such a cause would have been extremely easy of application. There are also many other causes which will suggest themselves to the competent pathologist, the operation of which the medical evidence should have been enabled positively to deny, upon inspection instituted with such a view; otherwise the evidence is defective, and inadequate to its object. If, for instance, on examining the wound, its characters were such as would not justify the conclusion that it was the cause of the locked-jaw, then some other must have been sought, and, whether found or not, the prisoner would have been exonerated. But when medico-legal investigations are undertaken by individuals, for which neither their education, their industry, nor their talents, befit them, we must be prepared for a most unsatisfactory result. I should not have been satisfied, without examining the person of the deceased, the intestinal canal, and all the other sources of tetanus, in coming to the conclusion adopted in this instance; more especially when I had not examined the anatomical structure of the parts wounded, nor the extent of injury.

It may next be inquired, what nerve could have been injured by a wound such as that described? The ulnar is the only one, and lies so completely protected behind the condyle and the flat ridge extending upwards from this process, that it could not possibly be injured unless the bone were broken. The bullet could not have penetrated deeply and taken a direct course, without breaking the bone; for the tendinous aponeurosis, &c. would unquestionably turn off a smooth spherical bullet, unless its course were direct, in which case the bone must have suffered. Therefore, as the bullet “penetrated on the inside, a little above the elbow;



and came out on the outside, a little above the olecranon," to cause such a wound it must either have broken the bone or it must have been compelled to run a superficial course under the skin. The latter is the proposition established by the evidence for the prosecution, and no one in the least acquainted with anatomy will admit the probability of such a wound being the cause of locked-jaw. If I am told there was no other cause of trismus in operation, and that there could be no other cause than the wound—I reply, the legitimate inference is, that there must have been a fracture, which escaped the skill of the surgeon; and this is a conclusion much better founded than that admitted, *unquestioned*, against the prisoner.

The next subject for discussion is the fact stated by the principal witness for the prosecution, that "the deceased took a good deal of brandy on the Saturday, which was necessary, to support him during the process of suppuration, fully established on that day." Is it not an axiom in surgery, that suppuration being established, the danger of locked-jaw succeeding is reduced to almost a nonentity? The co-existence of traumatic tetanus with suppuration is so improbable as to amount to almost a moral impossibility. Suppuration is the termination of inflammation, or the solution of irritative action, and without irritation there can be no locked-jaw; and therefore the supervention of locked-jaw and the suppurative process, are to be regarded as incompatibles.

Such, then, appear to me to be the insufficiencies of the medical testimony. There has been great omission in not having examined the wound, to ascertain its characters and the extent of injury: such an examination would have placed the question beyond the possibility of doubt. In the absence of such evidence, we may presume the operation of a number of other causes, each much more efficient than the one assigned. For instance, syphilis, worms, intestinal irritation, arising from either the ingestion of ardent spirits, or some other of the causes of such affections; nails or splinters in some of the more sensitive parts of the person; the awkward thrusting of the probe\* to examine the wound, irritating the parts in its course, or even a wound of the nerve in practising the venesection on

the Thursday—are all of them much more efficient causes of locked-jaw than a wound of the character described; and it is not difficult to imagine the result of a cross-examination of the medical evidence upon these points.

In this critique I positively assert that I am actuated by no unworthy motive. My objects are, to convince the government and the public, that it is not every man who can collect a few bottles and gallipots in a window that is fitted for the more difficult and abstruse inquiries which belong to legal medicine; and to point out to the profession the awful responsibility incurred by the practitioner, who undertakes to assist by his skill in furthering the ends of justice and the criminal administration of the laws. Opinions put upon record become the property of the public; and if they cannot stand the test of critical inquiry, to expose their fallacy and insufficiency is a duty due to the laws and to the public. I am, and possibly ever will continue, personally a stranger to all the parties, with one exception. It is not, however, to the individuals that I object, but to the doctrines which they have advanced—doctrines, too, which have had a most fatal tendency, upon the most insufficient grounds. If, therefore, this criticism should give offence, I can only lament that there should have existed a necessity which a sense of public justice and of public duty rendered irresistible. I should be the last to assist, either by legal or by professional ingenuity, to rescue a cold-blooded heartless murderer from the justice of his country; and it was not till perfectly satisfied of the truth of his assurances and the integrity of his character, that I decided upon rendering this unfortunate victim any little assistance within the compass of my abilities to afford. Nor should I even then have been induced to render him any aid, had he not most solemnly assured me, that he did not intend the slightest personal violence or injury to the deceased. I am happy to assert, that he persisted in this assurance to the very last, and that his dying declaration, after receiving the last consolations of religion, were to the purport, *that he fired at the pole, and not at the person of the deceased*; and he accounted for the defeat of his purpose by the pistols having been a long time loaded, and the powder having become caked.

I dispute not the legal justice of the

\* The finger in such cases is the best probe.

conviction, nor of the sentence; for no other result could have been anticipated, as the case went to the jury. Neither, perhaps, will the law allow the use of deadly weapons, even in the manner and with the intentions avowed by the prisoner; but this would not have been sufficient to a conviction, unless the fatal result could have been clearly and positively established as the consequence of his act, and it is the legitimacy of the medical conclusions that I impugn; for they are inductions founded upon insufficient antecedents. It is not, therefore, with the conviction that I would find fault, but with the insufficiency of the medical testimony upon which it was founded. But although an irresistible sense of public duty has induced me to submit this statement, yet the parties criticised have some reason to hold themselves indebted to me. From the lessons I have given them, some wholesome instructions may be derived for their guidance. They will either so regulate their future conduct as to set the most malicious inquiries at defiance; or if that be a lost hope, they will learn prudence enough not to obtrude opinions upon the public which will only pass without censure, when they pass without observation.

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#### OBSTETRIC SOCIETY—FORGERY.

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*To the Editor of the London Medical Gazette.*

14, New Broad-Street,  
Aug. 9, 1830.

SIR,

ALTHOUGH I am fully aware that the Editor of the *Lancet* has, on many occasions, shewn such a disregard to truth as to render it almost superfluous to refute any of his false statements, yet the complaint I have to make against that journal regards an act so flagrant and audacious, that I cannot, in justice to myself, refrain from giving it all the publicity which my opportunities permit me.

At the last meeting of the Obstetric Society, I was directed to transmit a short account of its proceedings to some of the leading medical journals; accordingly, at the commencement of June, I sent a copy to the *London Medical and Physical Journal*, your own respectable publication, and two others.

I addressed, at the same time, a short note to the Editor of each. That sent to the first-mentioned journal was in the following words, and has been published with the report:—

*“To the Editor of the London Medical and Physical Journal.*

“Sir,—Having been directed to furnish you with a short account of the Obstetric Society, I send you the enclosed.

“I am, sir,

“Your obedient servant,

“F. H. RAMSBOTHAM,  
Hon. Sec.

“14, New Broad-Street,  
June 1, 1830.”

You may imagine my surprise when, in the *Lancet* of last Saturday, I read the following paragraphs:—

“In a late number of the *Lancet*, we took occasion to inquire what had become of the Obstetric Society? Dr. Ramsbotham, the Hon. Sec. has put forth a reply in the *Yellow Journal* for the present month. For the accommodation of our readers, we have expunged a<sup>a</sup> that is no<sup>n</sup> material to the story; but as the article thus abridged is rather long, we must withhold comments till next week.

#### “OBSTETRIC SOCIETY.

*“To the Editor of the Yellow Journal.*

“Sir,—As the *Lancet* appears to be rather restless on the subject of our Society, and as the members have no desire to encounter its point, I have been directed to furnish you with the following short account of our proceedings.

“I am, Sir, yours,

“F. H. RAMSBOTHAM,  
Hon. Sec.

“14, New Broad-Street,  
June 1, 1830.”

Then follows a condensed account of the report, already in the hands of the profession.

The above letter, Sir, published in the *Lancet*, is a most impudent forgery; no such observations as those imputed to me in it, were ever penned or uttered by me on any occasion; and, as it is evident this fabrication springs from the Editor, by his pretending it to be a copy of a letter published in another journal, his conduct cannot be palliated by the

possibility of his having been himself imposed upon. Neither was the report in question published as a "reply" to, or called forth by any remarks in the *Lancet*; it was given to the public *solely* from a wish that the medical profession in general might be made acquainted with the means that the Society has taken to effect its proposed objects.

It may be thought the superscription, as given in the *Lancet*—"To the Editor of the *Yellow Journal*,"—would in itself be sufficient to stamp the whole letter a forgery; but that name has been so long, and is still so often, used in conversation, to distinguish the *London Medical and Physical Journal*, that, I doubt not, many of the *Lancet*'s readers would really believe I had forgot myself so far as to employ it when addressing the Editor in an official capacity.

I shall not occupy any part of your pages with observations on the indignation which every respectable man must naturally feel, on seeing his signature thus unwarrantably affixed to a production not his own, or on the degree of credit which the assertions of that journal ought to possess whose Editor can be guilty of such a gross violation of truth and propriety.

By inserting this letter in your next number, or, should want of space prevent you, by mentioning the circumstance which has induced me to intrude upon you, you may, perhaps, undeceive some of my medical brethren; and you will certainly much oblige,

Sir,

Your very obedient servant,  
F. H. RAMSBOTHAM.

#### ON MR. WARDROP'S METHOD OF TREATING NÆVUS.

*To the Editor of the London Medical Gazette.*

SIR,

I TRANSMIT you two cases, one of nævus, the other of aneurism by anastomosis, successfully treated by the *Kali Purum*, as recommended by Mr. Wardrop in the former disease.

These observations will not only confirm the observations of Mr. Wardrop, but they will lead me to make

some remarks upon the difference of the mode of action of this caustic, and that of nitrate of silver, which has erroneously received the same denomination. The first case, or that of nævus, will only require to be briefly and simply detailed. The case of aneurism by anastomosis was the subject of various surgical transactions by a *surgeon physician*, who, confounding the effects of the nitrate of silver with those of *caustic*, had long endeavoured to cure this affection by that remedy in vain.

The nævus was situated under the left side of the inferior maxilla, rather deeply seated beneath the skin, of the size of a walnut, but daily increasing in its dimensions: the patient was a child two years old. Having protected all but the central part by means of adhesive plaister, I applied the caustic potass to this part, in the manner directed by Mr. Wardrop. Ulceration was produced, and spread to the destruction of the nævus: a common poultice being applied, the process of destruction, which extended but to the boundaries of the nævus, was followed by that of cicatrization.

The case of aneurism by anastomosis occurred in a Mrs. Taylor, aged 34, occupying the middle part of the left ala of the nose, and appearing to penetrate through the textures of which it is formed. It had been subjected to scarifications both within the nostril and externally, and to applications of the nitrate of silver, during a period of eighteen months, without the slightest advantage.

I applied a small portion of caustic potass over the part externally, confining its operation by means of a piece of adhesive plaister pierced in its centre for the purpose, after the manner of making an issue. This process was required to be repeated five times, at intervals of about five days. The aneurism being now destroyed, the part healed spontaneously, leaving a cicatrix which is scarcely visible, and no orifice through the ala nasi, as it was feared any cure must do.

I think it important once more distinctly to state, that the nitrate of silver is not a caustic in any sense of the word. It subdues inflammation, and induces resolution and the healing process. It preserves and does not destroy the part to which it is applied. The pure potass, on the contrary, is a caus-



tic; it destroys; it induces the ulcerative process. Touch a part with the nitrate of silver, the eschar remains for a time, and then falls off, leaving the subjacent part healed. Do the same thing with the kali purum, it induces a slough, which, being separated, leaves an ulcerated surface. If an ulcerated surface, secreting pus, be touched by the nitrate of silver, the discharge is immediately converted into lymph. It is the property of the caustic potass, on the contrary, to induce not only ulceration, but suppuration.

In short, the peculiar properties of the nitrate of silver have long been kept unknown to us by its designation of the lunar caustic, affording the most striking instance of the influence of a term or of classification upon the human mind. The nitrate of silver and the caustic potass (as, indeed, all *caustics*) are as the poles to each other—the first preserves, the second destroys; the first induces cicatrization, the second ulceration.

JOHN HIGGINBOTTOM.

Nottingham, Aug. 9, 1830.

## MEDICAL GAZETTE.

*Saturday, August 14, 1830.*

“Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso.”—CICERO.

### GRADUATES OF EDINBURGH.

NOTHING, we apprehend, can be considered foreign to the business of this journal which has an obvious tendency to exalt the character of the medical profession, and to cement its several interests. An apology, therefore, will hardly be necessary for devoting a few columns of the present number to the details of some recent proceedings in which the Medical Teachers and Practitioners of London and Edinburgh have been found most honourably and sociably blended.

A deputation from the University of Edinburgh, consisting of the Very Reverend Principal Baird, and Professors

Monro, Alison, and Ballingall, arrived in London to present a loyal and dutiful address of condolence and congratulation to their Majesties on their accession. The Graduates of Edinburgh resident in and near to London were invited to attend them; and on Wednesday, August 4th, they were received by his Majesty in his closet prior to the general levee. Each individual was presented, and had the honour to kiss his Majesty's hand. The deputation afterwards proceeded to the Queen's Palace. The venerable Principal read a very affecting address, to which her Majesty replied (extempore) in a few short but impressive sentences. The members of the deputation and the graduates having severally kissed her Majesty's hand, then retired, impressed with a lively sense of the gracious reception which they had experienced.

To celebrate this event, and to testify at the same time their respect for the learned Principal, and the Professors forming the deputation, a dinner was given at the Freemasons' Tavern on Monday last, August 9th, by the Graduates of Edinburgh resident in London, when fifty persons assembled together, Dr. Roget in the Chair,—an honour to which his acknowledged merits as a physician and man of science, and his standing in the University, equally entitled him.

On the cloth being removed, the Chairman proposed the health of his Majesty, observing that the epithet, “most gracious,” could by none be more thoroughly appreciated than by those who, like himself, had enjoyed the good fortune of accompanying the deputation. The toast of the Queen and Royal Family, which followed, drew from the Chairman an animated eulogium, in which he painted with great force and feeling the many advantages which the country was likely to derive from the bright example of her present Majesty. Her gracious manner of receiving the deputation was eloquently adverted to.

The health of Principal Baird,

and prosperity to the University of Edinburgh, called forth from the Chairman many appropriate reflections. The advantages of academical instruction were very fully depicted, and a rapid sketch was taken of the practical benefits which this country had derived, and was still reaping, from the labours of the University of Edinburgh. Three of the most distinguished members of the last cabinet had been educated in Edinburgh—Lord Lansdowne, Lord Dudley, and Lord Palmerston. The University might boast of having given to the present cabinet Lord Melville and Sir G. Murray.

Principal Baird replied, and the deep and solemn tones with which he began, brought forcibly back to the mind of every graduate present, the memorable ceremony which admitted him to university honours. His emotion, he said, was too big for utterance. To find that neither time, nor distance, nor the want of all occasion of intercourse, could sever the Graduates of Edinburgh from their *Alma Mater*, was to him a source of the highest delight and pride. The manner in which the toast had been received would, he said, send him back to Edinburgh a prouder and happier man than he set out.—(The applause had certainly been thundering.)

The Professors of the University of Edinburgh was the next toast. The Chairman adverted to the very distinguished names which give present celebrity to the University, in so many departments of science. Invidious as it might appear to single out one for especial notice, where all were so deserving, he trusted he should stand excused for bringing forward the name of Sir G. Ballingall, whom the King at the late levee had raised to the knighthood. "The stamp of Majesty," the Chairman observed, "has now been placed upon his merits, and given him a new title to the gratitude of the University and the confidence of the public."

Dr. Monro, the senior Professor present, returned thanks, and very forcibly expressed the feelings of himself and colleagues at the proof which was before them of the grateful recollections of their former pupils.

The Chairman prefaced the next toast, which was "the Royal Society of Edinburgh," by a slight sketch of the general literature of Edinburgh. The names of Mackenzie, Sir Walter

Scott, and of Alison, were mentioned. Dr. Alison returned thanks. Principal Baird then rose to propose the health of the Chairman, coupling with it prosperity to the Royal Society of London, of which Dr. Roget is Secretary and a most influential member. Relaxing from his usual gravity, the venerable Principal here playfully expressed his gratification at the Chairman's want of faith—in phrenology, as it saved a head "now silvered o'er with age" from an examination which he should have dreaded to encounter. Dr. Roget, in the course of his reply, announced that, within the last few days, his Majesty had been graciously pleased, through Sir R. Peel, to signify his intention to take the Royal Society of London under his especial patronage.

Dr. Burder proposed the next toast,—"To the Memory of the distinguished individuals who have established the reputation of the University of Edinburgh." In a preface distinguished alike for elegance of diction and smoothness of utterance, Dr. Burder took a hasty sketch of the departed greatness of Edinburgh. Commencing with Robertson, the distinguished predecessor of Dr. Baird, he passed on to the names of Cullen, Black, Monro, and Gregory, ending with Dugald Stewart and Thomas Brown. The pleasing and useful influences of academical recollections were then enlarged upon with an energy that shewed how strongly the speaker felt them. Dr. Alison, in a brief reply, urged upon the students of medicine the unalterable duty of pursuing truth. He quoted the saying of some great master, whose name escaped us:—"I shall follow truth," said he, "and fame may then follow me, if she pleases."

Dr. Monro, with permission of the Chairman, next proposed "the Medical Schools of London." Mr. Charles Bell replied in a very able and elaborate address, in which he took occasion to advert to the merits of the two Hunters, of Cline, Abernethy, and others.

Alluding, in the course of his observations, to the different systems pursued in the schools of London and Edinburgh, he threw it out as a matter of doubt whether the appointment of teachers by public authority, or the spontaneous assumption of that office by such as "felt a call," offered the best prospect of public advantage. Touching upon the subject of the Lon-

don University and its now rapidly advancing rival, he said that rumour had characterized the one as possessing all the talents, and the other all the virtues. Mr. Bell's address was received with great applause.

Dr. James Clarke, in a well digested speech, proposed "the Medical School of Edinburgh." It was, he said, among the highest gratifications of his life to find the merits of the Edinburgh school so universally admitted on the continent. He called attention to the improvements which the system of medical education had recently received in Edinburgh, and paid a well-merited compliment to the Professors, who refused to rest upon their oars, content with the impulse of former greatness. He repeated his persuasion that the reputation of Edinburgh would be thus maintained, and eulogized the judgment with which such changes had been made. The whole was summed up in the following animated manner:—

"While we thus feel justly proud of the school to which we belong, let us not forget our own debt of gratitude to it. This is to be paid by a diligent cultivation of our profession—by a course of upright and honourable conduct among our fellow-citizens—by liberality among ourselves. Thus may we hope to uphold the fame of our *Alma Mater*; and though we aspire not to equal the great names whom she has nourished within her, let us be found toiling in the same path, and aiming at the same noble objects."

Sir George Ballingall replied. Soon after which, Dr. Stroud proposed, "Prosperity to the good city of Edinburgh." This toast could not have been placed in better hands. The Doctor proved himself an enthusiast in the cause of the modern Athens. He glanced at the picturesque situation of Edinburgh, and likened the Old and the New Towns to a venerable matron supported and surrounded by her fair and youthful daughters. He drew a picture of the sobriety and morality of the lower orders in Edinburgh, highly honourable to them, and which we sincerely hope that they deserve.

Principal Baird was peculiarly happy in his reply. Having, he said, been an inhabitant of the *gude toon* for upwards of half a century, he might be allowed to know something of it; and sure he was that it abounded in "honest men and bonnie lassies."

Dr. A. T. Thomson eulogized the character of Dr. James Hamilton, senior, author of the valuable *Treatise on Purgative Medicines*, and held him up as a model for younger practitioners chiefly in this—that he did not write a book until he could stamp it with the strong authority of ample experience.

Dr. Birkbeck returned thanks for "the scientific and literary institutions of Great Britain," which had just been drank, and drew a pleasing picture of the advantages of science in the humble as well as the more exalted walks of human life. At a later period of the evening, Dr. Birkbeck's health was proposed by Dr. Conolly, who characterized him as one whose whole life had been devoted to make men wiser, and happier, and better.

"The Royal Medical Society of Edinburgh" was pleasingly brought under the notice of the company, by Dr. Conolly. He portrayed the advantages of this association in strengthening the character of the Edinburgh student, and encouraging him in the liberal prosecution of medical science. He trusted that the members of the society would continue to be distinguished by their love of truth, and by fearlessly proclaiming it for the benefit of mankind.

Dr. Copland reminded the meeting that medical science was not confined to any university or school, and that, for many of the most enlightened views which it presents, we are indebted to the other seminaries of this kingdom, and to those foreign seats of learning of whom many were proud to trace their source to the same fountain at which we had drank. He therefore begged to propose "the other Universities and Medical Schools of this country, of America, and continental Europe."

Soon after this comprehensive toast had been drank, the company began to disperse. The feast of reason had been abundant, and it was generally admitted too that the dinner was sumptuous.

Sir G. Ballingall, late in the evening, took occasion to allude to this feature of the entertainment, and to propose, by way of return, the health of "*the Stewards*."

Dr. Gregory replied, that, feeling quite as grateful for the honour as if it had been merited, he begged to assure the meeting that the whole amount of praise due to the Stewards was very small. They had done little else than summon spirits from the vasty deeps of



London, who had answered to their bidding. They had, like Roderick Dhu's henchman, sped the fiery torch which had gathered the clan—the watch-word *Alma Mater*, and the muster-place Freemasons' Tavern. In this humble attempt, however, they could not have succeeded but for the assistance of those active agents in the republic of letters, the peripatetic philosophers of London—the twopenny postmen. With regard to the dinner itself, the merit of the Stewards was still smaller. It consisted merely in summing to their aid another class of philosophers, whom, in a literary circle like this, he would designate as the professors of practical dietetics—the real epicureans—Mr. Cuff's cooks.

The Doctor's speech was received with great applause, and he sat down by saying that—

“In the name of this united body, the Stewards, with their attendant sylphs and gnomes, he begged to return thanks for the honour conferred upon them by the presence of such distinguished guests.”

The meeting did not separate until a late hour. The utmost harmony and good humour prevailed, and an anxious desire was manifested that this should be made the commencement of a series of similar festive meetings—that the gentlemen educated at the University of Edinburgh should meet once in every year, and that, in the words of Dr. Alison, “*the recollections of Alma Mater should prove a lasting bond of connexion among the graduates of Edinburgh.*”

#### ANOTHER FORGERY IN THE LANCET.

WE beg to direct attention to the communication of Dr. Ramsbotham, at page 757: it contains an account of another impudent deception upon the public, and infamous violation of all honour and honesty by the Lancet—in a word, of another FORGERY. Doubtless the worthy editor will defend it as a mere *jeu d'esprit*, but he will do well to remember that these things may be carried too far. The pretended letter of Mr. J. H. Green was rather an ugly

story, and forgery is a kind of jest which is now and then apt to end in an unpleasant exhibition in front of the Old Bailey. The false quotations so frequently had recourse to, when it is found necessary to answer any thing which has appeared in this journal, are trivial delinquencies compared to the present, which is at once an injury to a private individual, and a gross insult to the public.

#### WESTERN HOSPITAL.

THE institution so called continues to have a nominal existence, and some very extraordinary proceedings have lately been adopted with a view of keeping up the deception in the public mind as to its circumstances. We have various curious documents connected with it now before us; but we do not regard them as of sufficient general interest for more lengthened notice. We observe, that since the retirement of Dr. Ayre and Mr. Truman, another physician and surgeon have accepted of these *nominations*. They must have been prodigiously in want of some means to bring their names before the public.

#### PRESENTS TO EDITORS AND ROYAL PAGES.

IN our last number we hinted at the circumstance of the worthy Editor of the Literary Gazette having met with a fall from his horse—but we fear the allusion was not sufficiently intelligible to those previously unacquainted with the particulars. They run thus: Mr. St. John Long, whose miraculous cures had been industriously blazoned forth in the pages of the Journal in question, very naturally and properly presented the Editor with a horse. But the ungrateful animal, regardless of the services which his new rider had rendered to his former master, very unceremoniously threw him

into a ditch, in consequence of which he received a contusion on the head, and was carried to the Westminster hospital in a state of insensibility. Had he preserved his consciousness he would no doubt have directed his attendants to convey him to Harley Street, in which case his recovery—if he had recovered—would have added another to Mr. St. John Long's long list of cures. For the sake of the literary world, we hope he will in future be cautious in receiving presents of horses—to take care that they are properly broke.

By the way, we have heard another curious story about a horse—one presented by a *late* "surgeon to the king" to a *late* royal page: but this we reserve for another time.

#### INSTANCE OF THE KING'S MEDICAL SKILL.

At the present moment all anecdotes of our most gracious Sovereign are calculated to excite interest. The following, which illustrates his Majesty's acuteness in appreciating the physiognomy of disease, we have from a source which leaves no doubt of its authenticity.

When the present king, then Duke of Clarence, was serving as Admiral of the Fleet, in 1814, he condescended to visit the Naval Hospital at Deal more than once, making particular inquiries into every seaman's case. On one of these occasions his Royal Highness saw a man in a corner bed, at some distance off, when, addressing himself to Mr. Hutchison, the surgeon of the hospital (from whom we have the anecdote), he said, "don't tell me any thing of that man's case, I know his complaint, and I will tell you all about him when we reach his bed."

"You, friend," said his Royal Highness to the seaman, "have been serving on the coast of Africa, and your disease is worms." The man, putting his hand to his night-cap, said, "yes, your Royal Highness, I have just come from the coast of Africa, and that is my disease, as the doctor can tell you." The Royal Duke had not before seen this patient, who had been recently ad-

mitted for hernia humoralis, but this complaint not having yielded to the usual treatment, the surgeon, thinking it might be symptomatic of worms—a very common disease in Africa—ordered him a dose of oil of turpentine, which only the day before had expelled some yards of tape-worm.

His Majesty had served on the coast of Africa, and with his characteristic quickness of perception and retentive memory must have recognized in this instance the peculiar aspect communicated by the diseases of that country.

#### PHYSICIANS TO THE KING.

DR. WARREN's appointment as physician extraordinary to his Majesty has been cancelled, at his own request.

#### HUMAN HORNS.

At a late meeting of the French Institut, some observations were communicated by M. Cozes on the subject of the occasional production of horns in the human subject. The number of instances of this nature which have been collected amounts to seventy-one, and some specimens of which are to be deposited in the museum of the Academy of Paris. M. Breschet cited two additional examples of the same kind of accidental production in the human species. One of these occurred in a woman, who had growing from her head a singular kind of horn. This person used frequently to be seen about ten years ago, either at the Hospice de Perfectionnement or at the St. Louis, both of which she was in the habit of frequenting. M. Clcquet also stated that he had seen and minutely examined this individual.

Not to speak it profanely, in this country the male sex is more apt to be afflicted with those "accident productions," as the French call them.

[The following memoranda are from a Report of the Birmingham Eye Infirmary, by Mr. Middlemore, published in the *Midland Reporter*.]

#### GAS-LIGHT PRODUCTIVE OF OPHTHALMIA.

The use of gas, in some manufactories, has been very injurious to the eyes

of many of our artisans, more particularly when used without being surrounded by a glass; the flame being then wavering and variable, sometimes approaching very near to the eyes, and yielding a brilliant light; at others, exciting scarcely a perception of light to an eye previously subjected to one of an exceedingly luminous quality. After having investigated the cases of many patients, who have suspected the cause of the injury, I am induced to believe that amaurosis and chronic ophthalmia are sometimes occasioned by working by the powerfully concentrated light produced by the combustion of gas; and in accordance with this conviction I am in the habit of recommending those workmen whose eyes are becoming seriously defective from this cause, but whose subsistence depends on the continuance of their labour, to procure a glass similar to that of a reading-lamp, which not only confines the flame, but steadies and more equally diffuses the light.

#### VACILLATING STATE OF THE IRIS.

The iris has been said to vacillate, in consequence of a want of support: thus, if the anterior chamber be unusually large, the lens absorbed, or the vitreous humour lessened in quantity or diminished in density, the iris may be expected to assume that action called vacillation, quivering backward and forward as the movement of the body may direct it, uninfluenced, as regards the steadiness of its motion, by its own natural contractions. Mr. Guthrie mentions his acquaintance with a patient in whom the iris had acquired this unsteady movement, the eye being apparently healthy; he also remarks that the iris will frequently maintain this in-stemine kind of motion, although the pupil be closed. Dr. Frick, when alluding to the symptoms of solution of the vitreous humour, observes, "the pupil is much contracted and irregular; the iris loses its irritability; very often it is found tremulous, or is seen to vacillate backwards and forwards, on any motion of the eye-ball." He further remarks, that in such cases the lens generally becomes opaque and softer in its texture, but this, I imagine, must be a mistake, a soft lens is almost invariably more diffused than a hard one, and is observed to be so close to the iris as to interfere with the freedom of its action:

the support which the iris thus receives, or rather, the pressure that it endures, would, according to the old doctrine, be sufficient to prevent the possibility of vacillation. Mr. Lawrence observes that, when the vitreous humour is converted into a fluid state, the iris acquires a peculiar tremulous or oscillatory motion, in consequence of the loss of its natural support. Many writers upon this subject have expressed the same opinions. Having frequently seen this unsteady action of the iris follow an injury, which has produced the formation and absorption of cataract, and, at the same time, either torn the sclerotica or iris; and observed it succeed reratonyxis, or the posterior operation of solution when the iris has been wounded, or the sclerotic punctured in the situation of one of the ciliary nerves; and having known patients so affected, who have never met with any injury to the eye, nor discovered any defect of vision, nor required the aid of spectacles; and having also observed it even when the pupil has been closed, where no want of support could be presumed to exist; and, on the contrary, having known this symptom wanting in cases of extraction, where the lens, and a large quantity of the vitreous humour, have escaped, and also, generally, when this operation has been well performed, the iris not being injured either by the operation or the passage of the lens; and having also remarked it much more commonly follow the posterior operation of solution than extraction—I am induced to believe that the notions commonly entertained upon this subject are erroneous. I believe vacillation of the iris to occur as the product of sympathy or irritation, or some injury to the lenticular ganglion, or other part of the nervous apparatus of the iris; and that it can, in no instance, be fairly alone referred to a want of that support which it has been said to receive from the posterior contents of the globe. The membrane of the aqueous humour, which covers the front and back surface of the iris, appears not only to be subservient to the purposes of secretion and absorption, but to render the same support to the iris, as fasciæ afford to muscles. I am induced to allude particularly to this circumstance, from having remarked a vacillating condition of the irides in a palsied individual, whose eyes were, in other respects, perfect,



and who had neither received any accident, nor undergone any operation, in either organ; and from having occasionally noticed the same occurrence after the posterior operation of solution, where only a portion of the cataract, too small to deprive the iris of any appreciable amount of support, had been absorbed, where, it is presumed, one of the ciliary nerves had been in some way injured. My respected friend, Mr. Wickenden, has related to me the following particulars, as noticed in the eyes of an intimate acquaintance. A gentleman, rather advanced in life, has been slightly palsied for some years, and has a vacillating state of the iris, although vision, considering his age, is remarkably strong; he has met with no accident, and has been the subject of no operation to either eye; he has never worn spectacles, and is neither far nor near-sighted. I cannot learn whether or not this condition of iris existed prior to the general affection of the muscular system; nor can I ascertain how far it has increased with the progression of the more important malady. This subject is one well worthy investigation, but I shall content myself with this cursory notice, in the hope of drawing towards it the attention of others, until a more intimate acquaintance with cases of this description enables me to enter upon minuter details.

#### STRYCHNIA IN AMAUROSIS.

Having previously pointed out the cases that seemed to me likely to be benefitted by its use, and those in which its application is counter indicated—and having described the best mode of applying it, and the doses suited to effect the object in view, without injuring the health or endangering the occurrence of severe symptoms—and having stated the success which had, in many cases, followed its employment, I will only add that, if a proper case be selected, its employment cautiously ventured upon, and carefully watched, its absorption ensured by sprinkling it upon a perfectly raw surface, preventing it from being removed by friction and other causes, and not mixing it with a mass of greasy matter, it will prove a powerful addition to our means of combating this wretched malady.

It was stated in a former paper that some patients would not bear its application; and in two or three instances, I

have found it productive of so much head-ache and ~~lassis~~ <sup>lassis</sup>, that it would have been highly improper to persevere in its use; while others, who were even much benefitted by it, refused to permit its repetition, on account of the severe local pain it excited. In one remarkable case of amaurosis, dependent on an enfeebled condition of the retina, where the application of the strychnine upon the blistered surface, over each eyebrow, occasioned intense anguish its use was suspended, the bowels well opened, and the health improved, so as to enable me to resume its use, and eventually to conduct the patient to what he considered a perfect cure; but, unfortunately, it was found necessary to continue the use of the remedy to preserve vision, its suspension being invariably followed by loss of sight. Two of the cases forming a part of those on which I founded my opinions of the value of strychnia, in my last report, have also experienced a similar change, and it is but justice to acknowledge a fact which must be borne in mind, when estimating the value of this most excellent remedy.

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#### ANECDOTES OF BRITISH PHYSICIANS\*.

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##### LINACRE.

ERASMUS, in a letter to Bilibaldus Pirekheimerus, gives a very particular account of the manner in which he was relieved by the direction of Linacre in a fit of the gravel; and the rational simplicity of the method offers a favourable specimen of his medical practice. He says, Linacre, whose assiduity in attendance was equal to his knowledge, sent for an apothecary to his sick chamber, and caused him in his presence to prepare the following remedy:—Camomile flowers and parsley were tied up in a linen cloth, and boiled in a vessel of pure water, till half the liquor was exhausted; the cloth was then wrung out, and applied hot to the affected part, and ease was presently procured. In a violent attack, this remedy, on the second application, brought away a stone as big as an almond. One cannot deny, that the remedy was a judicious one; but a warm bath, which would now-a-days have been suggested by any

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\* From Murray's Family Library—Lives of British Physicians.

tyro in physic, would have been a little more efficacious, though it might not have had so medicated an appearance—a circumstance of no small importance in these matters.

#### THE SWEATING SICKNESS.

This curious disease appeared, for the first time, in the army of the Earl of Richmond, upon his landing at Milford-Haven in 1485, and spread to London, where it raged from the beginning of August to the end of October. So formidable and fatal were its effects, that the coronation of Henry VII.—the victor in the battle of Bosworth-field—was deferred till this strange pestilence had subsided. It was a species of malady unknown to any other age or nation, which occasioned the sudden death of great multitudes. Caius describes it as it appeared for the last time among us. The treatment of it is perhaps the most interesting, at least affords us the most amusing particulars. It turns upon the sole idea of promoting the sweat, and Caius lays down the strictest rules for avoiding any thing that might expose the patient to the least cold, or check this salutary and critical evacuation. On this point he is peremptory. "If two be taken in one bed, let them so continue, although it be to their unquietness; for fear whereof, and for the more quietness and safety, very good it is, during all the sweating time, that two persons lie not in one bed." To promote perspiration they are ordered to drink posset ale, made of sweet milk, turned with vinegar, in a quart whereof parsley and sage, of each half one little handful, hath been sodden, &c. If under this treatment, loaded with bed-clothes, and almost stifled with heat—they happen to feel faint, "cause them," says the doctor, "to lie on their right side, and bow themselves forward, call them by their names, beat them with a rosemary branch, or some other sweet little thing; do not let them on any account sleep, but pull them by the ears, nose, or hair, suffering them in no wise to sleep, until such time as they have no luste to sleep; except to a learned man in physick the case appears to bear the contrary. If under this discipline they happily recover, and find their strength to be sore wasted, let them smell to an old sweet apple, and use other restoratives of similar efficacy; for," concludes Dr. Caius,

"there is nothing more comfortable to the spirits than good and sweet odours."

#### CAIUS.

Before his death he was reduced to a state of great bodily weakness; and from a curious passage in Dr. Mouffet's *Health's Improvement, or Rules concerning Food*, we learn that he attempted to sustain his decaying frame by reverting to the food of infancy. The passage is as follows:—

"What made Dr. Caius in his last sickness so peevish and so full of frets at Cambridge, when he sucked one woman (whom I spare to name), forward of conditions and of bad diet; and contrariwise, so quiet and well, when he sucked another of contrary dispositions? Verily, the diversity of their milks and conditions, which, being contrary one to another, wrought also in him that sucked them contrary effects." Notwithstanding all these precautions, Caius died July 29, 1573, in the 63d year of his age, and was buried within the chapel of his own College, in a grave made some time before his death, which, it is said, he foretold; and on his monument, instead of a prolix epitaph, was placed the laconic inscription:—

FUI CAIUS.

## HOSPITAL REPORTS.

### ST. THOMAS'S HOSPITAL.

*Malignant Disease of the Lower Jaw—Operation for the removal of nearly one-half of the Bone.*

ELIZABETH CAMPING, 34 years of age, admitted into Queen's ward on the 1st July, under the care of Mr. Green. The patient is of healthy appearance, with a tendency to be robust, and has dark hair and eyes. She states that, about four years ago, a shooting pain commenced in the gum on the inner side of the jaw opposite to the last molar tooth, attended with slight swelling, which in a few days burst, and discharged offensive matter; the wound in the course of three or four days healed of its own accord, and the part appeared to continue free from any affection for nearly three months, when she was attacked with pain and swelling of the gum as before, a spontaneous opening formed, and offensive matter escaped;

this discharge, however, continued but for a short time, and the wound again closed.

For the space of twelve months and upwards she was from time to time in this way attacked with pain, swelling, and discharge of fœtid pus. On questioning her again, she cannot say whether the matter escaped through an opening in the side of the gum, or whether it made its exit from between that part and the side of the tooth. The last time of the attack the tooth fell out from its socket, and the hole soon after became occupied by swelling, and the shooting pains were at times much more acute. The disease went on gradually increasing for upwards of seventeen months, when she consulted a medical practitioner. Caustic was first applied to the surface of the swelling internally, and six leeches to the tumor on the outer side, with the use of poppy fomentations. The latter was continued for some time, but not finding any benefit, embrocations and ointments were next had recourse to. These were rubbed into the swelling externally, and, during their use, it appeared to increase in size; consequently they were discontinued. A lancet was passed into the tumor in the mouth; nothing, however, but a small quantity of blood escaped. This was not attended with much pain, or an increase in the swelling. The operation was repeated five or six different times while she remained under the treatment of this gentleman, which was upwards of a year and three quarters. The mouth was likewise kept frequently washed with a lotion. For some time previous to her admission nothing was done, and from the treatment which had been adopted she said she derived no benefit. The tumor has continued very gradually to increase from its first onset up to the present time.

In describing the external character of the swelling as regards its dimensions, we should say that it is not of considerable magnitude; but when that side of the face on which it exists is compared with the opposite, the difference is very striking. In this respect, however, the effect is lessened by the diffusion of the swelling; the unnatural fulness can be traced from where the bone is articulated at the right glenoid cavity down to its angle, and from thence forward to within an inch of the symphysis; reaching also more superiorly to the malar bone, and inferiorly and anteriorly to the nose and angle of the mouth. The swelling along the course of the bone is quite hard; its principal prominence is a little anterior to the angle, where it projects about an inch beyond the surrounding parts; no pain is produced on pressure. In the mouth, the tumor is also firm and compact; the principal part where it projects inwards, is opposite to the situation of the second molar tooth, which was re-

moved by her medical attendant previous to her admission into the hospital. On the upper part, however, there is a circumscribed patch, more soft, and presenting a wart-like appearance.

Mr. Green having determined on the nature of her complaint, proposed the removal of a portion of the bone, which accordingly was performed on the 9th. Two of the teeth on that side, which were likely to interfere with the operation, were extracted the preceding evening.

*Operation.*—The patient was placed, sitting on a low seat, with the left side of her head resting on pillows upon the operating table. The operator, standing on her right side, began his first incision at the angle of the mouth, directing the cut obliquely downwards and backwards, to about an inch below the base of the jaw. His next incision was commenced opposite to the glenoid cavity, and carried downwards, across the swelling to the angle of the bone, and from thence forwards, by a continuation of the cut, till it reached the termination of the first incision. In this step of the operation he merely divided the common integuments. These, with the subjacent soft parts were next dissected up sufficiently to get at the facial artery, which was secured by ligature; the separation of the soft parts from the tumor was then further effected at the upper part, and a ligature passed around the transverse facial artery. After the external surface of the bone had been clearly exposed, a double-edged scalpel, which was made use of during the former part of the operation, was passed down on the inner side, about an inch from the symphysis, and the muscles freed from their attachment by the introduction of a crooked needle, to which was attached a chain-saw. This being done, Mr. Green attempted to draw the saw through from the outer to the inner side, but the needle became detached. As the point of the saw could be seen on the inner side of the bone, it was attempted to be pulled through with a pair of forceps; but this, after a few attempts, not being effected, a director was passed up underneath it, and then withdrawn along its groove. The needle was again attached to the saw, and passed up along the groove of the director, and by this means the saw was got up to about midway with perfect ease; it was then attempted to be worked, but owing to some imperfection in the teeth of the instrument, its use was obliged to be relinquished, and the bone cut through with Hey's saw, which was performed in little more than a minute. The director was left remaining after the removal of the chain-saw, for the teeth of the one which was substituted to cut down upon. The next



step of the operation consisted in detaching the muscles on the inner side; this was carefully performed, so as to avoid wounding the internal maxillary artery, and done by raising up the angle of the bone, and dissecting them from their attachments underneath. The same careful manner was observed in separating the parts about the joint, and removing the bone from its articulation. There were only the two vessels secured which have already been mentioned, and but very little blood was lost; there was more, however, escaped down the throat during the operation than was observed externally. The operation was borne remarkably well, and the patient was scarcely heard to cry out during the whole of its performance; in short, she only gave two or three slight indications of suffering at the time the disarticulation was taking place. The edges of the wound were brought together by sutures and strips of adhesive plaister, and the remaining portion of the jaw supported by means of a roller passed around the head. On examining the jaw after its removal, the disease was found to be of a fungoid nature, taking its origin, no doubt, from the alveolar cavity where the tooth fell out; as on the upper part, about this spot, there was a circumscribed patch, about the disk of a shilling, having the wart-like appearance already noticed. The thickness of the jaw at this part was about two inches and a half, or three inches; both the inner and outer plates of the bone were very thin, but more especially the former. The condyle, and in fact the whole of the upper part of the bone from the angle, was quite altered from its natural appearance and healthy texture, and had become much thickened.

On the following day she appeared to be going on remarkably well, and had had several hours' sleep during the night. Towards the afternoon Mr. Green saw her, and requested that no one should visit her.

13th.—The wound is quite cicatrized, except at one part, which is about the middle of the second incision, where there is a small opening about a quarter of an inch in length, discharging healthy pus. Yesterday she complained of pain in the abdomen; but this morning the menstrual discharge having appeared, the pain has left her. She is fed with beef-tea, by means of a piece of bougie placed upon the dorsum of the tongue, while in the other end is fixed the pipe of a large syringe charged with the liquid, which is then gradually forced through the tube. The dressing to-day was removed for the first time; the sutures were directed to be left untouched, and a few strips of plaister to be placed across the cicatrix, leaving interspaces.

15th.—Yesterday afternoon the sister of the ward says that she observed a red mark

at the lower part of the right cheek, which has since been very gradually extending up that side of the face; there is scarcely any discharge through the opening, but a good deal came yesterday from the mouth. Ordered—

Five grains of mercury with chalk, and half a grain of tartarized antimony, to be taken occasionally. Weak spirit-wash to the face.

20th.—The erysipelas, for so it proved, has spread over the whole of the face and forehead, but it is now subsiding; vesications formed at different parts, but they have likewise all disappeared. On the 17th she was directed to take five grains of mercury, with chalk, at bed-time, omitting the antimony; and the following dose every four hours:—

Citric Acid 26 grains, Subcarbonate of Ammonia 24 grains, Tincture of Hop half a drachm, water an ounce. Jelly; port wine, &c.

The swelling of the face is less, but there is slight discharge from the wound; skin hot; tongue rather brown, but moist; pulse quick, small, and weak; bowels open. All the strapping removed, except two strips near the mouth. In addition to the jelly, she takes beef tea and arrow-root. To have—

Five grains of mercury with chalk; and five grains of the extract of henbane at bed-time.

August 3.—The patient is quite convalescent, and to-day she got up from her bed. There is now no discharge, and she says she feels quite comfortable. The deformity occasioned is only from the sinking in of the cheek, and the existence of the cicatrix; the former, on account of her being a fleshy woman in the face, is much less than might have been expected. She can only open her mouth sufficiently to show about an inch of the tongue; doing this gives no pain.

On the 22d she was ordered a grain and half of sulphate of quinine, two drops of sulphuric acid, with a drachm of syrup of orange peel, in an ounce and half of distilled water, every six hours. This she continues to take up to the present time. She is allowed half a pint of bottled porter daily, with meat diet: this, on being stewed and cut very minutely, requires no mastication.

Great praise is due to the sister, for her kindness and constant attention to the comforts of those patients submitted to her care; and more especially from the manner in which she has, on this occasion, contributed towards a successful termination of the case, by her assiduous watchfulness over the welfare of the patient.

W. WILSON, Printer, 57, Sukiner-Street, London.

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## LECTURES ON SURGERY,

*Delivered at St. Bartholomew's Hospital,*

By WILLIAM LAWRENCE, F.R.S.

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### LECTURE LXX.

AFFECTIONS OF THE EYE continued — *Chronic Ophthalmia—Rheumatic Ophthalmia—Inflammation of the Internal Parts of the Eye—Hypopyon—Iritis—Retinitis—Glaucoma—General Ophthalmia.*

WHEN active inflammation of the eye has been neglected, or treated inefficiently—when the patient has resumed too soon the use of the organ, or has not paid proper attention to diet and general management—the disorder is protracted; it lasts a considerable time; it becomes what, in technical language, we call chronic inflammation—*chronic ophthalmia*. The symptoms are not so troublesome to the patient as during the acute stage of the inflammation; there is less pain, less uneasiness; the blood-vessels of the organ are distended; the eye is incapable of making its usual exertions, so that it waters and feels uneasy when the patient attempts to employ it; it appears to him to be weak, he wants something to strengthen it, and from the general use of this expression practitioners are sometimes led to suppose that there is some actual weakness present, which it is necessary to remove by stimulating local applications and internal treatment of a similar character.

Chronic inflammation of the eye is, in fact, essentially the same kind of disturbance as the acute ophthalmia, except that it is less violent, and that the disturbance is not so considerable in degree.

The first point, therefore, in treating a case which comes under the description of chronic ophthalmia, is to remove the inflammatory state; and this must be accomplished by means of the same character as

those which we use in combating acute inflammation. It is often necessary to bleed locally, particularly by cupping; and sometimes even in a case which, from its duration, must be called chronic ophthalmia, it is necessary to bleed generally, and to use other parts of the antiphlogistic treatment. It has been very frequently the practice, in cases of inflammation of the eye of some duration, to apply stimulating or astringent remedies, under the notion of giving tone or imparting strength to the blood-vessels, and removing the weakness which is supposed to be occasioned by the permanent distention produced by the inflammation. One application of this kind has come into very general use, in consequence of its having been employed and recommended by a gentleman considered to possess great knowledge in this department—I allude to the late Mr. Ware; and that is, dropping into the eye a preparation of opium—*vinum opii*—a vinous tincture of opium—the *tinctura thebaica* of the old London Pharmacopœia; the only liquid preparation of opium in that Pharmacopœia, and containing double the quantity of opium which is contained in the tincture of the present Pharmacopœia. The mode was, to apply a drop of this between the palpebræ once or twice in the course of the four-and-twenty hours; indeed Mr. Ware applied it very generally in the more acute as well as in the chronic forms of the affection. Now in instances of inflammation of the external tunics of the eye, where, by active treatment, we have removed the more striking symptoms of the inflammation—where the eye is in that state in which it pours out water when it is exposed to the air, and in which there is a fulness of the blood-vessels and uneasiness, the patient experiencing no other inconvenience—the *vinum opii* may be dropped into the eye once or twice a-day, without any disadvantage, and sometimes with much benefit.

I have mentioned the use of astringents, where the mucous membrane is the seat of inflammation. In the catarrhal ophthalmia,

purulent inflammation, purulent ophthalmia of newly-born children, acute gonorrhœal inflammation, and in that subsequent state in which the mucous membrane lining the eyelids becomes granular—the mechanical irritation of those granulations producing vascularity and nebulous opacity of the cornea—the employment of astringents, after the use of all such means as are calculated to remove the active inflammation, may be beneficial. A solution of the nitrate of silver, and the undiluted liquor plumbi acetatis, are generally considered the best. But it is sometimes necessary to go beyond this,—to evert the eyelids more especially, and to rub the internal surface with the sulphate of copper in substance. This is a remedy which you are not to apply very frequently, and even then it is necessary to absorb, with lint, the moisture from the eyelid, before you replace the lid on the eye. In chronic ophthalmia, counter-irritation is serviceable; blistering behind the ear, or on the nape of the neck, friction with the tartar-emetic ointment, and, in some instances of obstinate chronic inflammations of the eye, more especially in those where there is some change from deposition into the structure of the cornea, great advantage is produced by a seton in the temple, or you may make an issue by pinching up the skin, carrying a knife through it, and making an incision large enough to receive two peas. This mode of counter-irritation is very useful in the treatment of obstinate inflammation of the eye of a chronic kind.

Inflammation of the external proper tunics, which I mentioned to you in my last lecture—that is, inflammation of the sclerotic, in which the cornea is often involved, and the iris sometimes participates—may be produced by external causes. If a foreign substance, for instance, lodges in the cornea,—if a smith, for example, in striking a hot iron, knocks off a portion, and it becomes fixed and impacted in the cornea—it will produce inflammation of the cornea, and a corresponding inflammation of the sclerotic coat; and other kinds of wounds or injuries will produce the same sort of mischief. But we see inflammation of the sclerotic most frequently as a form of rheumatism affecting the eye—that is, it occurs in persons of a rheumatic constitution. The sclerotic is of a fibrous texture, and is analogous, therefore, to some of those textures of the joints which are the seat of rheumatism; hence inflammation of the sclerotic is sometimes described under the epithet of *Rheumatic ophthalmia*. This is a form of disease which we frequently observe in conjunction with, or in succession to, gonorrhœa. In individuals of rheumatic constitution, in whom this affection of the external proper tunics of the eye takes place, either with gonorrhœa or rheumatic affections of the joints,

which themselves occur under gonorrhœal inflammation, you have this affection with inflammation of the urethra and purulent gonorrhœal discharge. The affection of the external proper tunics of the eye, and inflammation of the synovial membrane of the joints, are sometimes combined together, sometimes they occur in succession, and sometimes they alternate—that is, you have the disease passing from the one to the other organ or texture, so that each part is affected more than once in the same case.

I may here mention to you, that the eye is liable to three forms of inflammation in conjunction with gonorrhœa; in the first place, it is liable to a mild inflammation of the mucous membrane, something similar to that which I described in speaking of catarrhal ophthalmia; it is liable to a more dangerous inflammation—acute gonorrhœal ophthalmia; it is also liable to this inflammation of the external proper tunics—that is, of the sclerotic—in which the cornea and iris are sometimes involved.

The treatment of this affection, when it occurs in rheumatic subjects, or in conjunction with gonorrhœa, is essentially the same with that which I have mentioned before. You must, in the first instance, adopt an antiphlogistic treatment, according to the degree of the symptoms and general state of the constitution, and then it is advantageous to resort to a moderate use of mercury, employing calomel and opium if the sufferings should be considerable, or Plummer's pill, four or five grains night and morning, together with aperients and blisters. You seldom find it necessary in these cases to employ mercury so actively as to affect the system.

I proceed next to speak of inflammation of the internal parts of the eye. The chambers which contain the aqueous humour form a point of transition between the external and internal parts of the eye, for the concavity of the cornea constitutes a portion of those chambers, while its convexity forms a part of the external surface. The sclerotic, the cornea, and the iris, appear to be closely connected in a pathological point of view, as well as in their ordinary vascular supplies; so that you do not find one of those parts to be considerably affected without the others participating in the disease. If any cause of inflammation affect the cornea, the vessels of the sclerotic coat become distended; when inflammation of the iris takes place, the vessels of the sclerotic also become filled; so that, although we divide, in our pathological considerations, the external from the internal parts of the eye, you must be aware that there are points of connexion between them, so that we see some of the external and some of the internal parts occasionally suffering together.

The chambers which contain the aqueous



humour are liable to inflammation; this is an affection which is commonly seen in young subjects. When the complaint is fully developed—I speak of subjects of from two or three to seven or eight years of age—it exhibits the following appearances: the cornea is dull and hazy, and sometimes slightly nebulous; the sclerotica is red, particularly round the margin of the cornea, where it exhibits a zone of a pink or violet tint; the iris is altered in its colour, and in blue or grey eyes it assumes a reddish tint, particularly on its pupillary margin; a purulent matter, or something which wears the appearance of pus, is also secreted from the inflamed surface, and sinks to the bottom of the anterior chamber, where it forms into a small collection, in shape somewhat resembling the white mark at the roots of the nails. A little pain is experienced in the eye and in the head at the commencement of this affection; but at the time of its full development, and when it presents the characters I have mentioned, we often find that the child hardly complains of pain, and exhibits no intolerance of light. At the first view of an eye thus diseased, you would suppose that the affection was serious, and would ultimately destroy the sight; it is not, however, of a dangerous nature, but readily yields to a simple course of treatment, and terminates without any ultimate injury to vision.

In the first instance you employ a few leeches, and purge the child; then exhibit mercury—a grain of calomel, with two or three grains of antimonial powder, every four or five hours: or four or five grains of hydrargyrum cum creta two or three times a-day: in this way the matter becomes absorbed, the cornea clear, and the natural appearance of the eye, and perfect vision, are restored.

The deposition of matter into the anterior chamber takes place under several circumstances, and has been technically called *Hypopyum* or *Hypopyon*—a Greek term. It has been spoken of in works on the eye, as if it were a particular and distinct disease. Now hypopyon is not to be regarded as a distinct disease, any more than the presence of matter is to be considered a distinct disease in any other inflamed part of the body. The presence of matter in the anterior chamber of the eye is the result of inflammation attacking some part of the tunics which form the concavity of the chamber; it is the result of inflammation arising to a certain point. Matter is then deposited on the surface which secretes the aqueous humour; it is deposited in the anterior chamber, in consequence of inflammation of the iris, and it is also found to take place in consequence of inflammation of the cornea proceeding to suppuration. When the matter has formed, instead of escaping externally it makes its way into the anterior chamber,

to the bottom of which it falls; you see a yellowish substance, having the appearance of fluid matter, subsiding to the bottom of the anterior chamber—and this constitutes hypopyon.

It has been generally considered proper, in the treatment of hypopyon, to make an opening into the cornea to let out this matter, but, in my opinion, that practice is entirely wrong. The object here is to put a stop to the inflammation which produces the deposition; and if you do that, as absorption is extremely active in the anterior chamber, the matter which has been deposited will be quickly removed, so that an opening for its discharge is altogether unnecessary. Further, the opening for the discharge is not effective; for although this particular appearance leads you to suppose that a fluid matter is contained in the anterior chamber of the eye, you will find, when you come to make the opening, that it is a thick viscid substance; so that, although the incision is made, the contents do not run out. The matter is not fluid, like that which is found after phlegmonous inflammation; it is a thick viscid substance deposited in the interstices of the part: it is of no use, therefore, to puncture the cornea; and further, when the matter has passed into the anterior chamber, it still possesses the viscid character, which prevents its escape. Accordingly, the plan of puncturing the cataract, to let it out, ought not to be adopted in any instance. When I say in any instance, I may except the case where violent inflammation attacks the interior of the globe generally, and the globe suppurates; where the anterior chamber is filled with matter, and the whole cornea presents a yellow appearance; where the whole eye may be said to be converted into an abscess. In this case the eye is destroyed as to vision, and you may hasten the relief which the bursting of the cornea affords, by making an opening to let out the matter; but where the mischief is not so great, you are to employ the antiphlogistic treatment, or mercury, in the way I have mentioned, and trust to the natural process of absorption for removing the puriform matter in the anterior chamber.

The iris is liable to inflammation, and this constitutes the case technically called *Iritis*. Inflammation of the iris shows itself principally by effusion of lymph. The iris and the anterior chamber of the eye bear a kind of analogy to the serous cavities of the body, the changes in the one resembling those in the other; for example, in the cavity of the abdomen, and also in the cavity of the chest, we observe that inflammation generally exhibits the adhesive character—that is, it produces readily the effusion of coagulating lymph, and the same circumstance takes place in inflammation of the iris. The lymph exuded in inflammation of the iris is

deposited into its texture, and produces a change of colour in the organ, altering its natural appearance; you have distinct masses on the surface of the iris—small tubercles—of which there may be one, two, or more, of various sizes, either on the edges of the pupil or on the surface of the iris; it is also deposited in such a way as to form preternatural adhesions between the margins of the pupil and the crystalline lens, fixing the pupil, and preventing its ordinary motions of dilatation and contraction. These are the principal symptoms which characterize inflammation of the iris: the change of colour in the organ, the deposition of lymph in masses, either on the edges of the pupil or on the surface of the iris, so as to cause preternatural adhesions between the pupillary margin, or posterior surface of the organ, and capsule of the lens. The pupil generally contracts in iritis at the commencement of the affection; indeed there is an intolerance of light, a painful sensation caused by the accession of light to the eye, and the pupil contracts, in order to exclude the admission of light, which acts thus painfully on the retina. The lymph which constitutes the preternatural adhesion is thus effused on the contracted iris, which it tends to fix and retain in this condition. In conjunction with these changes in the appearance of the iris and the pupil, we find increased external redness of the eye, and this redness in the commencement is seated anteriorly on the sclerotic coat, forming a zone or boundary of red immediately round the margin of the cornea. The vessels of the conjunctiva are but little distended, and the sclerotica retains nearly its natural paleness. Thus the eye presents a zone or boundary of red immediately round the cornea, while the rest of the organ is nearly natural in its appearance. As the affection, however, advances, more particularly if it be acute, the redness extends to the sclerotic coat generally; the vessels of the conjunctiva then become filled, and the whole external surface of the organ presents one general appearance of redness. The lymph which, in the first instance, is so effused as to form adhesions between the margin of the pupil and the crystalline lens, sometimes is thrown out in larger quantity, and fills the pupil, generally forming an opaque greyish film, destroying the natural dark-black appearance of the pupil altogether. When the lymph is thus effused, you will readily conceive that vision must be seriously impaired; indeed, when effusion has commenced in iritis, vision generally becomes dim, and the dimness often increases to such an extent that the patient is merely able to distinguish between light and darkness. In conjunction with these changes, more particularly if the inflammation have been acute, the cornea loses its transparency, becoming hazy and dull.

Iritis may exist in various degrees; you may have it acute or chronic. In the acute affection, the symptoms are developed rapidly, and are not easily checked. The inflammation, which usually begins in the pupillary margin of the iris, soon extends, so as to occupy the whole surface of the iris, passing from the margin to the ciliary circumference—from the cornea to the sclerotica, and in the result affects the external as well as the internal parts; so that in acute iritis, after a time, you find it so extending as to occupy both the external and internal tunics. In chronic iritis, the inflammation will commence in the pupillary margin; it may creep to the ciliary circumference, and thence to the internal parts, but it does so very slowly. In chronic iritis you sometimes have effusion of lymph, causing adhesion between the pupillary margin and the capsule of the crystalline lens, without any visible redness of the eye. This slow inflammation may be equally propagated to the more remote parts of the eye, as in the acute form of the disease. Thus it may happen that iritis has occurred in one eye—that it has produced the deposition of lymph so as to form a series of adhesions fringing the entire border of the pupillary margin, and then extending to the whole of the tunics of the globe of the eye, so as to render the retina wholly insensible, without occasioning any external redness, or producing any pain, or in fact any symptoms that have attracted the attention of the patient or the persons attending him; and at last the patient has only observed by accident that vision is lost. There is, therefore, the greatest difference between acute iritis and one of these insidious chronic cases; and you have every gradation between them.

Iritis again differs with respect to the cause which produces it. It is sometimes brought on by causes immediately acting upon the iris; the wound, for instance, which is inflicted on the iris in the operation of extraction or depression of a cataract, will sometimes cause iritis; the exposure of the eye to very strong and powerful lights, or its exertion on minute objects, will cause iritis; and the inflammation thus produced by circumstances acting directly on the organ is called idiopathic iritis. In the greater number of cases of iritis, however, it seems to owe its origin to some morbid condition of the system, and this form of it has therefore been called sympathetic iritis. It is most frequently seen as a secondary symptom when occurring in connexion with syphilis, and is particularly characterised by effusion of lymph in distinct masses on the external surface of the organ. You see little drops or tubercles of lymph, of a light yellowish-brown colour, sometimes of a pretty bright red colour, deposited either on the margin or on the surface of the iris itself. Together with this, other

changes arise in the organ, from the general effusion of lymph into its texture. When these masses of lymph are deposited on the pupillary margin, they fix it by adhesion to the capsule of the crystalline lens, and render the parts incapable of motion, producing an irregularity in the figure of the pupil. In syphilitic iritis there is another symptom characteristic of the complaint—it is, that the pain consequent on the affection appears in the form of nocturnal paroxysms: the patient is tolerably easy during the day, but soon after going to bed, or at some particular hour in the night, or early in the morning, severe pain comes on; often not of the eye itself, but of the parts around it, and increases to such a degree as to prevent the patient from resting during its continuance.

Another form of iritis is frequently seen in gouty persons, called *Arthritic iritis*, which is distinguished by the circumstance of the patient having had other arthritic affections, and by the iris being generally changed in colour, from effusion into its texture, but not exhibiting distinct masses of lymph on its surface, the pupil being contracted, and occupying the centre of the iris; whereas in syphilitic iritis there is an effusion of lymph on the margin of the iris, while the pupil is apt to be irregular, and is very frequently contracted and drawn towards the internal angle of the eye.

In the treatment of iritis we are to employ in the first instance active antiphlogistic means. There is an active inflammation spreading with great rapidity (if of the acute form), seated in an important part of the eye, and which, if you allow it to proceed, will extend from the iris to the choroid coat, and to the retina, and thus endanger vision in the most serious manner; you must therefore take blood from the arm in robust persons, and also from the head and neck by cupping, repeating these until you have decidedly checked the inflammatory affection. In many cases of iritis you can remove all symptoms, and put a stop entirely to the affection, by the antiphlogistic treatment, carried to a considerable extent, and persevered in for a sufficient length of time. But in many instances, although you can check the inflammatory disturbance—although you can lessen the vascular congestion of the eye, and relieve the patient from the pain and feverish symptoms—yet you do not succeed in putting a stop to the effusion of lymph, or causing the absorption of that which has been already deposited. You find it necessary to resort to other means—principally to the use of mercury, so as to affect the constitution. The use of this remedy, after the employment of the antiphlogistic means I have mentioned, has the most decided influence in putting a stop to the disturbed condition of the vessels of the iris on which the effusion depends: it arrests

the effusion of lymph—that which has been already effused becomes absorbed—the masses of lymph, when such have been poured out, are removed by the absorbents—the iris recovers its natural colour—the cornea becomes clear again—the zone of red in the sclerotic coat around the cornea becomes less vivid, is soon dispelled, and vision is rapidly restored. These effects take place with great rapidity when the system has been strongly and speedily affected by mercury, and they depend mainly upon the degree of influence which the mercury has on the system; for this purpose the exhibition of calomel with opium is the best mode of proceeding. Two or three grains of calomel, with a third or half a grain of opium, may be given every four, six, or eight hours, until free salivation is produced. In some particular instances you may find it necessary to rub the mercurial ointment on the inside of the thighs—to administer the hydrargyrum cum creta, or blue pill; but in general calomel and opium do very well. You must keep up the mercurial effect on the system until all appearance of disease is removed, and then you must allow it slowly to subside. In conjunction with this exhibition of mercury, you must employ belladonna locally, in order to dilate the pupil—belladonna, hyoscyamus, and stramonium, have this effect; that is, when the pressed juice or extract of either of these vegetables is applied to the surface of the eye, dissolved in distilled water, or when the extract is rubbed on the skin above and around the eye, it has the peculiar effect of producing contraction of the iris, and consequent dilatation of the pupil. We employ the belladonna from finding it the most effective, and consequently the most convenient of these narcotics. When you introduce it into the eye, the mode is to drop a solution of the extract (made by dissolving one scruple in an ounce of distilled water, and then filtering it) once or twice in the course of the four-and-twenty hours; or you may rub the upper eyelid, the eyebrow, and the neighbouring part of the frontal region, with the extract moistened into a sort of paste with distilled water, using it as if you were laying on a coat of black paint, letting it remain there for an hour, and then washing it off. The latter is the most convenient form, when it is used in active inflammation of the iris. If the eye be not actively inflamed, the solution of the extract may be employed more advantageously: the immediate application of the substance to the surface of the conjunctiva produces the greatest effect; the application of the extract to the eyebrow and neighbourhood of the eye does not produce quite so much influence. The employment of belladonna in this way, with mercury, favours the action of the remedy: while the lymph is absorbed under the action of the



mercury, the belladonna favours its influence by dilating the pupil—by overcoming the contraction which is observed in iritis. In instances where adhesion has been produced between the capsule of the crystalline lens and the margin of the pupil, if this remedy be applied while the lymph is still soft, the iris in many cases will become detached, so that the pupil recovers its natural size and usual mobility; or, in other instances, the soft and ductile matter is stretched, and the adhesions, instead of fixing the capsule of the lens to the margin of the pupil, form links or threads, which do not materially interfere with the motions of the iris.

I do not mean to represent to you that the employment of mercury in this case is absolutely necessary—I wish you to understand, that in many cases a cure may be effected by the ordinary antiphlogistic means—I only speak of the mercurial treatment as being imperatively required and very advantageous in most cases, bringing the complaint to a more speedy and effective end than would be obtained by the employment of the antiphlogistic means alone. In gouty iritis, the free employment of mercury is not so advantageous as in syphilitic iritis, and in that of the idiopathic description. It has been found that persons of gouty diathesis do not bear the exhibition of mercury so well as others. In such cases we employ antiphlogistic means, according to the degree of inflammation which is present, and use the mercury moderately. I do not consider that the use of mercury in gouty habits is so injurious as to preclude altogether its employment; on the contrary, I think it ought to be used moderately. We may employ the Plummer's pill night and morning, but not so as to produce its decided influence on the system.

The retina is, perhaps, as liable to inflammation as the iris, but we are less acquainted with the phenomena of inflammation in this part, in consequence of its being situated out of our sight; and as it does not in general terminate fatally, we have not the opportunity of tracing the phenomena after death. Many cases occur, however, in which we can entertain little doubt that inflammation of the retina is the cause of the symptoms. I may mention an example of this kind:—A young woman, of florid complexion, and rather full habit, who was cook in a large family, and occupied for many hours a-day before a large fire, and living tolerably freely at the same time, began to feel uneasiness in one eye, the vision of which also became dim. When I saw her, she said she had something the matter with one eye. On making a superficial inspection, nothing was apparent, but on examining the eye more narrowly, I observed that one pupil was a little more dilated than the other. There was a degree of

redness and flushing of the face; and on questioning her, she said that she had had considerable pain in that side of the head, with dimness of sight. She had a white tongue and thirst;—and a slight tinge of redness was observable in the anterior part of the sclerotica round the cornea, with a slight dilatation of the pupil. These constituted the only visible changes in the eye. I directed that she should lose some blood from the arm, take active aperient medicine, go upon a reduced diet, and avoid exposure of the eye to any strong light or heat. In a couple of days I saw her again, but the treatment had made the eye no better; on the contrary, the sight was worse. I then directed the free abstraction of blood from the arm, and cupping, with aperient medicine, and at the end of two other days the sight was still more dim. I then commenced the active employment of calomel, giving every four hours two-grain doses. Two days from the commencement of this plan, she could not feel that the sight was worse, but upon accurately examining, I found that in reality, at this time, vision was very nearly gone, and she could do little more than distinguish between light and darkness; however, after this time, the mercury very speedily affected the mouth, and in a short time more, very profuse salivation was produced, on which all the pain ceased, and vision was so much improved that in the course of a few days the power of the retina was completely restored. Now I should call this a case of *Retinitis*—if we were to give it a regular technical denomination—an example of inflammation of the retina, confined to the texture in which it first commenced, and extending very little to the other parts.

The treatment of such a case is, in fact, the same as that of iritis generally. Antiphlogistic means first, and then the use of mercury, so as to produce its peculiar effect on the system; and, as far as my experience goes, I should say that mercury thus used exerts fully as decided a power in putting a stop to inflammation of the retina, as it does in stopping inflammation of the iris. In all cases, then, that come under the description of active inflammation of the retina, you may trust with full confidence to the exhibition of mercury in this way.

Now if the inflammation of the retina so commencing be allowed to proceed, it will, in the first place, render the retina incapable of vision; but as the inflammation extends to the other tunics, the vessels of the sclerotica become filled, a zone forming round the edge of the cornea; then the iris begins to alter in colour, the pupil begins to contract, lymph is effused into the aperture of the pupil, and thus we find it is a case of inflammation of the internal tunics of the eye generally. In the commencement, it would be a case

simply of simple inflammation of the retina; in the end it is a case of inflammation of the internal tunics generally. The treatment is the same as in other cases of the kind.

There are some cases of inflammation of the internal tunics of the eye in which the attack of inflammation seems to take place in the *vitreous humour*, *retina*, and *choroid coat*. These occur in elderly persons; at all events, in persons past the middle period of life; either in those of a gouty constitution, or in those who have lived very freely, and who have brought on a state of body very analogous to that of the gouty diathesis—persons in whom free habits of living have produced redness in the integuments of the nose and face—a pimpled and swelled state of the nose, with a varicose condition of the vessels about the face. In such instances, severe pain will come on in the eye; the pupil becomes dilated, and instead of presenting its natural colour, exhibits a dull dirty greenish hue, in consequence of the change which the inflamed vitreous humour has undergone. The pupil is excessively dilated, the iris is altered in colour, generally becoming of a dull leaden cast, there is great distention of the external vessels of the eye, particularly of those of the choroid coat, and in the very commencement of the affection, vision is usually totally destroyed. With this green shade, this excessively dilated condition of the pupil, and the dull leaden-looking iris, you have almost a complete loss of vision. It is, in fact, an inflammation commencing in parts most essential to the function of vision—in the retina, in the vitreous humour, and probably involving the choroid coat.

All we can do in a case of this kind, is by the employment of antiphlogistic means to relieve the patient from the pain in the eye, and the general inflammatory symptoms that accompany the affection. We have no power in this case, when it is fully developed, of restoring vision; at all events I have never seen a case of this kind in which vision was lost and then restored. It has sometimes been called acute *glaucoma*, the term *glaucoma* being derived from the greenish appearance of the eye. It has been called *acute glaucoma* in contradistinction to another change which takes place where, without any enlargement of the vessels, without any very severe pain or absolute extinction of vision in the first place, the pupil exhibits the same greenish discolouration, a discolouration which obviously does not depend on a change in the crystalline lens, for it is more deeply seated; it occupies the fundus of the eye, and you can only see it by looking at it when you are standing directly before the patient, not by looking at the eye sideways. This is called *glaucoma* simply; and it appears to me to be a chronic form of the same affection as that to which the term acute *glaucoma* is given. This chronic form of *glaucoma* is

important to be observed, for it is liable to be confounded with cataract.

By moderate antiphlogistic treatment, with the moderate use of mercury and means of that kind, you may check the progress of chronic *glaucoma*, but you do not in general succeed in restoring vision; the best you can do is to prevent the change from going beyond the point it has reached at the time you first see the patient, and to preserve that degree of vision which the patient may then possess.

These are the principal inflammatory affections of the eye. I have mentioned them as they occur in the particular textures of the organ; not that in all instances you will see them confined to those textures, but only very commonly. You will find them limited in proportion as the period at which you see the patient is early, and the treatment has been judicious. It is principally in consequence of neglect or injudicious treatment that the inflammation becomes extended over the several textures, or the whole of the eye.

Now when the conjunctiva is affected, I have mentioned that you will find it occurring under the form of *catarrhal* inflammation; when the sclerotica is involved, it is generally *rheumatic* inflammation, and may be called *rheumatic ophthalmia*. But those two tunics are so intimately connected that it is not uncommon to have them both affected at one and the same time, when the disease has been designated *Cutarrho-Rheumatical Ophthalmia*.

There is nothing peculiar in the treatment, when both membranes are involved at the same time; in fact the treatment of inflammation of the membranes of the eye is generally the same as that of other corresponding parts of the body.

In the same way inflammation attacking any one particular texture may extend, first, to the internal, and then to the external tunics, although, in general, if the treatment be judicious, it is confined to the texture in which it is originally developed.

There are cases, but they are rare, in which the whole globe of the eye, both the external and internal parts, are involved in one inflammation. You may have, first, the sclerotica becoming red, then the conjunctiva passing into a state of chemosis, the iris changing its colour, the pupil becoming contracted, and filled with effused lymph—in fact the whole both of the external and internal tunics becoming involved in one inflammatory affection; to such a case the name of *general ophthalmia* has been given by German writers. It is one of the most serious diseases of the eye, and will require all the most direct and active antiphlogistic means, whether general or local, you can employ to check it; but you will very seldom have an opportunity of observing one of those cases of general ophthalmic inflammation.

## LECTURE LXXI.

DISEASES OF THE EYE *continued*.—*Amaurosis*—*Hemeralopia*—*Nyctalopia*—*Presbyopia*—*Nyopia*—*Use of Glasses*—*Musæ Volitantes*—*Peculiarities of Vision*, with regard to colours—*Strabismus*.

VISION, gentlemen, may be injured or lost in various ways; in consequence, for example, of change of structure in the transparent media through which the rays of light pass—that is, in consequence of opacity taking place in the cornea, or in the crystalline lens and its capsule, or in the vitreous humour;—in consequence of obscurity or closure of the pupillary aperture through which the light has its passage, —or in consequence of disease of the nervous structure of the eye. To the loss of sight which arises from the latter cause the name of *Amaurosis* has been technically given. This, which is a Greek word, signifies, simply, *darkening*; of course it implies that diminution of vision which is consequent on affections of this important structure. The term *gutta serena* is, perhaps, nearly synonymous with amaurosis; however, there is this distinction between them, that amaurosis is a general term applied to all affections, whatever may be their degree, of the nervous structure of the eye; while *gutta serena* is rather applied to the complete state of blindness which arises from the affection of the nerve when it is fully established.

The nervous structure of the eye may be affected in any part of its course; that is, you may have disease affecting the nerve, where it is connected with the basis of the brain, or in its passage within the cavity of the cranium, or within the cavity of the orbit, or, finally, in its expansion on the interior of the globe of the eye. Affections arising from disease of the nervous structure in any of those parts come under the common denomination of amaurosis. It is not uncommon to have vision impaired or lost from causes which act on the nervous structure belonging to the organ of vision, within the cavity of the cranium; such as the collection of fluid in the ventricles of the brain in hydrocephalus internus—disease in the brain in the situation where the nerve of vision is connected with the basis of the brain—tumors that press on it in its course within the cavity of the cranium—and disease of the bones affecting the nerve in this situation—tumors, or disease of the bones, affecting the nerve in the cavity of the orbit, or disease of the nerve itself within the cavity of the orbit: all these produce impaired vision, and ultimately loss of sight. In these cases the loss of sight is generally accompanied with severe pain in the head, and other sufferings which are not relieved by any treatment that we adopt, and by a regularly proceeding uniform course of

symptoms which usually point out the existence of such organic disease as I have just alluded to; but the affection to which I now wish to direct your attention particularly, is that which arises from a diseased condition of the nervous expansion, or the retina within the globe of the eye.

The retina may be affected in common with other structures of the globe of the eye, for it is involved with them in some of the diseases I have already mentioned to you; but we give the name of amaurosis to those cases particularly in which the retina suffers originally and exclusively. The instances in which the retina suffers in common with other textures of the eye are named according to the more prominent characters of the complaint; but it is when the retina is the original or exclusive seat of disease that we apply the term amaurosis.

The retina suffers from an inflammatory affection, in consequence of over-exertion of the eye in many persons, whose employment in various mechanical occupations is attended with an habitual straining, and in whom the effort of the eye is continued for a great many hours of the day: this is the case with tailors, milliners, mantua-makers, watchmakers, mathematical instrument-makers, printers, engravers, writers—those that are employed by lawyers, and others—in fact, by a great many persons occupied in various departments analogous to those which I have just mentioned to you. In all these instances the retina is excessively fatigued, the degree of exertion is continued for a greater length of time than the organ is capable of bearing, while it is employed on objects that require close attention and continued straining of the eye. The effect of this excessive exertion is of course greater in the instance of persons of very robust frames and full habits, and those who indulge in eating and drinking, so as to induce determination of blood to the head; and the effect will be greater when, in conjunction with these circumstances, persons lead very sedentary lives, and neglect active exercise. You will find, then, that in these various ways a great number of the community are exposed to those causes which are calculated to bring on disease of the nervous structure of the eye; hence you will not be surprised to find that amaurosis is a very frequent affection. In some cases, however, the retina is affected sympathetically. It does not follow, in all instances, that there is actual inflammatory disease of the organ; the retina, like any other part, may be attacked by causes which act on it, so as to disturb its function, without producing visible derangement of its structure. A distinction has been made of amaurosis into organic and functional; that is, into those cases of amaurosis which depend on an actual change in the structure of the ner-



vous part of the eye, and those in which only the function of the retina is disturbed: this, of course, would be a very important distinction, if we were able to point out the difference in practice; but the truth is, that we cannot see the retina, and are unable, therefore, to determine, in particular cases, whether the organ is the seat of an inflammatory affection, or suffers merely in its function. We know that in certain cases the function of vision may be temporarily impaired, or even almost totally interrupted, and then suddenly recovered; we see such instances sometimes in children from the irritation of teething, and from worms in the alimentary canal; and we therefore judge there can be no real disease of the retina, but infer that the disease is only functional.

The symptoms of amaurosis, at least those which are characteristic of the affection, are to be found in the state of vision and in the condition of the pupil. There are other symptoms which are connected with the complaint, but they vary in different instances,—they are not to be relied upon as characterizing the affection; for instance, in some cases, the origin and progress of amaurosis may be preceded and accompanied with pain in the head, and various uneasy sensations in the neighbourhood of the eye; these pains are sometimes very considerable, but, in other instances, are not present at all. In some cases there are obvious marks of derangement in the functions of the alimentary canal; in other cases these are wanting. But you look to the condition of vision, that is, to the state of the function as it is exercised by the retina, and also the condition of the pupil which depends on the state of the retina, in order to discover those symptoms which more particularly indicate the nature and degree of the disease. In amaurosis, then, you may have the function of sight interrupted in various ways and in various degrees, or it may be entirely destroyed. The patient loses the power of clearly discerning the form or the colour, the outline or the position, of the various objects around him. In many cases, the patient at first seems to perceive objects through a kind of mist or cloud, which conceals them, and which gradually becoming thicker and thicker, ultimately destroys sight entirely. Sometimes objects appear to be seen with tolerable clearness, but yet they are not properly distinguished from each other. Thus, a person in attempting to read finds that the letters run into each other, or that the lines of the print appear to be multiplied; sometimes the forms of the letters or of the objects he sees around him are distorted and changed, and sometimes the colours of the objects are essentially altered. There are instances in which the patient can see only the half of an object before him; he is able to see only the

upper or the lower half, or the left or the right side of an object; very frequently also, and more particularly in the commencement of the affection, patients lose the power of distinguishing things which are immediately before them, but are able to discern those situated on one side; that is, the central portion of the retina—the part habitually exercised—loses its power first, while the circumference of the retina, which ordinarily is not so much exerted, retains the power of vision longer. Frequently the affection commences by the appearance of various aerial spots, clouds, specks, imaginary objects which appear to float before the eye; these generally pass under the name of *muscæ volitantes*, although they are not in all instances in motion or floating, but sometimes fixed. It occasionally happens that a black spot or point is fixed before the eye; this becomes larger and larger, till at last it occupies the whole field of vision. Patients observe objects sometimes double—they have double sight; but this rarely takes place, except in instances in which a degree of squinting occurs, and where, perhaps, one eye is affected more than the other, and does not move in harmony with the sound one, and where, in consequence of the want of correspondence in their axis, two objects are seen instead of one; in such instances, if the patient close one eye, the object is seen single, and it is only when both eyes are open that double vision is observed. In whatever way the affection shows itself, we find that it is at first but slight in degree, that it gradually increases, and that if the cause which produces it continue to act, no means being taken to prevent the development of the affection, it goes on until the patient is deprived of sight. When I state that sight is lost, I do not mean that the retina is in general rendered absolutely insensible. There are few instances in which the patient is not able to distinguish between light and darkness, and in some he still retains the power of distinguishing large objects.

When the complaint is fully developed, that is, when vision is nearly or entirely lost, there is a peculiar stare which particularly denotes the existence of amaurotic blindness. When a person thus affected comes into a room he does not fix his eyes in the same manner as a person who has the proper use of the retina, but he seems to fix them on the centre of the room, and exhibits a peculiar vacant unmeaning stare, which at once points out the existence of this affection. In loss of sight from cataract, the person when he enters a room looks about, although he cannot see, as if he were attempting to observe objects, and was conscious that the power of vision still existed; but in the case of complete amaurotic blindness, that state which is termed *gutta serena*,

the eye is wide open, and directed quite into the air, or into the centre of the room.

The motions of the iris, and consequent changes of the pupil, are considered to depend upon the condition of the retina. We find ordinarily that when the eye is exposed to a powerful light, the pupil contracts in order to exclude some portion of it, and, on the contrary, when the light is weak, that it dilates in order to admit a larger quantity of light. Speaking, therefore, of the changes of the pupil and iris, we can have little hesitation in stating that they depend upon the influence which light has on the retina. The process of disease in the retina of course tends to lessen the action of light upon that part, and it cannot but produce a sensible change in the motions of the iris and the size of the pupil. When the retina becomes less sensible the iris moves less briskly, the pupil exhibits fewer of those natural changes which the ordinary variations of light would produce, and in proportion as the insensibility of the retina increases, the motions of the iris become more and more sluggish, until at last, when the retina is rendered completely insensible, the iris becomes motionless, and the pupil remains in a permanently dilated state.

As one of the most striking symptoms of amaurosis or gutta serena, a permanently dilated state of the pupil has usually been mentioned; and the representation is correct, if we consider it as applying to complete amaurosis, that is, complete insensibility of the retina; but inasmuch as the term amaurosis includes all degrees, from the slightest form to the entire loss of sight, you will understand that this permanent dilatation of the pupil is not found under all circumstances. In the first place you have only a sluggishness of the iris, without any very material dilatation of the pupil. In some instances, too, we find an amaurotic state of the retina, where the pupil instead of being dilated is contracted; and there are some instances in which in conjunction with amaurosis which appears to be so complete as to render the patient unable to distinguish between light and darkness, a nearly perfect state of the motions of the iris still exists: this is more particularly the case in diseases affecting the nervous structure of the eye within the skull; for instance, in cases connected with hydrocephalus, where the retina may be perfectly insensible, and yet the iris will move nearly in a natural manner.

Amaurosis generally commences in one eye, and after proceeding to a certain extent in that, shows itself in the opposite eye, unless means are taken to check its progress. It does not necessarily follow that amaurosis will attack both eyes, but in the great majority of instances it takes place first in one eye and then in the other; it will take place

in the second eye, if the original cause continues, and no means are adopted to obviate its effect. Amaurosis attacks subjects of all ages, and under all circumstances. We see it taking place in children, and occurring at all periods of life down to old age. There can be no question that the cause of this affection, in the great majority of instances, is a state of the retina which must be deemed inflammatory, and, consequently, that the plan of treatment must be of the antiphlogistic kind. The cure, in fact, of amaurosis, like that of inflammation of the iris, turns upon two points;—the employment of ordinary antiphlogistic means, that is, the abstraction of blood either generally or locally, with the other parts of the antiphlogistic treatment, and afterwards the use of mercury so as to affect the system: indeed mercury appears as effectually to check the progress of inflammation of the retina as it does that of inflammation in the iris, and it acts as beneficially in checking the progress of the chronic inflammation of the retina, which is the ordinary cause of amaurosis, as in checking the progress of the more active inflammation of the retina, which would constitute retinitis. In order to derive the full advantage which this remedy is capable of rendering, it is necessary in these cases to produce its peculiar action on the system, and sometimes to keep it up for several weeks. It is not sufficient just to render the action of the mercury sensible on the mouth, and then to discontinue it: you must often produce and keep up pretty free salivation for some weeks, in order to enable you to derive all the benefit which the remedy is capable of affording. You will readily understand that the circumstances under which amaurotic affection takes place are so various, and that the powers of the system in individuals are so different, that you cannot always adopt the same treatment: you are not to suppose that in all cases you are to bleed the patient from the arm, to cup him, and then to administer mercury so as to produce salivation. In the case of amaurosis, as well as in other affections, you are to adapt the remedy to the circumstances of the case: if you have to treat an amaurotic affection in a robust person of full habit, in a young person, or one not beyond the middle period of life, you may find it necessary to have recourse to active abstraction of blood in the first instance, and then to use mercury very freely; but under other circumstances you would both bleed and employ the mercury more moderately. Suppose the case to be one of an elderly female, who has injured the eyes by excessive application to needlework—a thin spare and sallow person, who by a sedentary mode of life has brought on an inactive condition of the alimentary canal, who, by keeping constantly within

doors, and by the nature of her occupation, has considerably weakened the nervous system—you would not think of proceeding to such active modes of treatment. You might find it necessary to apply a few leeches to the temples, or perhaps you might not take blood at all; but you would put a stop to the exciting cause, would enjoin repose, administer alterative doses of mercury, as the blue pill or Plummer's pill with mild aperients, and perhaps tonics, and order a change of air.

In the treatment of these cases counter-irritation is sometimes a useful auxiliary. You may find it necessary, in conjunction with other treatment, to apply a blister behind the ear or on the neck, perhaps every five, six, or seven days during the time you are employing the other treatment. Other plans have been recommended in amaurotic affections. Scarpa, and some of the German writers, have particularly recommended the employment of emetics, having considered that a foul and loaded state of the stomach exists, and conceiving that benefit will arise from the action of emetics in clearing away the obstruction which they suppose to exist, and in removing the matters which irritate the stomach. They administer the tartrate of antimony as an emetic, repeating it from time to time, and afterwards giving remedies very similar in their nature to our Plummer's pill, combined with purgatives. For my own part I have seen no decidedly good effect produced by emetics in amaurotic affections. There may be some cases in which emetics may be useful, but considered as a general remedy I think the plan of treatment is objectionable; it might induce you to omit means of greater efficacy. Electricity has been recommended, under a notion that the defective state of vision arises from a kind of nervous weakness of the eye which might thus be amended. But I suppose that electricity is no more capable of putting a stop to inflammation of the retina than of any other part or texture of the body; and I imagine there is no great evidence for supposing that electricity is much of an antiphlogistic. Under an idea that the deficient state of vision arises from weakness of the nerve—an idea which appears to have arisen in a great measure from the expression used by patients that their sight is "weak"—all kinds of tonics and stimulants, and antispasmodic remedies, have been tried over and over again in amaurosis; indeed, it would take a long time to go through a catalogue of such means that have been employed in cases of this kind. I conceive that their use proceeds on a quite erroneous idea as to the nature of the disease; that the weakness of sight in this instance arises merely from disease of the nervous structure, by which the sense is exercised; and that you could no more obviate it by tonics or stimulants, or

nervous remedies, than you could by the same measures obviate the weakness of any other organ of the body that is in a state of high inflammation. These means, in fact, are not only not efficacious, but I consider them to be absolutely and very seriously injurious; indeed I have no hesitation in saying, that I have seen cases over and over again where an impaired degree of vision, arising from an affection of the nerve that might have been arrested by proper treatment, has been increased and confirmed under the employment of stimulants. Vast numbers of eyes must have been sacrificed by the adoption of treatment directed on these mistaken views. I think you will hardly meet with any case in which the amaurotic affection can be clearly traced to causes that can be considered to be of a debilitating nature. There is, perhaps, only one kind of amaurosis that can at all come under this description. Women who are suckling, and who have continued to suckle for a long time, sometimes become much enfeebled, weak, and nervous, and their sight then frequently suffers; they see imaginary objects, sparks and flashes, before their eyes, and the sight becomes dim. You find in such cases a collection of symptoms indicating debility. Under these circumstances, weaning the child, the administration of a good diet and light tonic medicines, will often put a stop to the affection. It is a kind of amaurosis which I think may so far be said to owe its origin to something like debility; but it is almost the only kind of case in which that description of treatment is applicable.

I have mentioned to you that amaurosis sometimes appears to be what is properly called a functional affection; that is, it takes place under circumstances in which we cannot suppose the nervous structure of the eye to be actually diseased. There is one remarkable case of this kind, to which the term *Hemeralopia*, or night-blindness, is given, where the amaurotic affection is intermittent and periodical. The patient sees very well during the day, but the sight becomes defective as twilight approaches, and is totally suspended during the night, while vision again becomes perfect as the sun rises. This is an affection which is rarely seen in this country, or in similar climates, but it is by no means uncommon in the warmer regions of the globe; and it appears to arise from excessive stimulation of the retina, occasioned by the strong light to which the eye is exposed in those countries during the day, so that the retina is not sufficiently excited for the purpose of vision by the weaker light which exists at night. The affection proceeds, in certain cases, to such a degree, that an individual who has seen quite well during the day, when night comes on finds that the power of vision is so completely gone that he



is unable to see the light of a candle brought close to the eye. This affection will last for a considerable length of time, but does not terminate in loss of vision; on the contrary, the affection at last goes off, and sight is recovered. Blisters—to the temples particularly—will be found the most efficacious mode of treatment. I have seen the affection in a few instances in this country; but the cases were all such as had originated in the East or West Indies, and where persons have experienced it after their return. After suffering for a length of time in those regions, it has given way to mild antiphlogistic treatment, blistering, and purging.

A state of the eye is mentioned under the term *Nyctalopia*, that is, blindness during the day, with vision at night. Now I cannot say that I have ever seen an instance of that kind. In individuals labouring under strumous ophthalmia there is such a degree of intolerance of light that the patients may be said to be blind during the day—they cannot bear the light; and yet those individuals, when twilight comes on, are able to open their eyes, and can see: that is certainly a nyctalopic state. There are also states of the eye in which the patient sees pretty well in a moderate light, although he cannot see in a strong one. A central opacity of the cornea or of the crystalline lens constitutes a case of this kind. In a strong light the pupil is contracted, and no light gains admission; but in a weak light, where the pupil becomes dilated, light passes in through the transparent circumference of the cornea or of the lens.

There are certain states of imperfect vision which arise from alterations in the optical parts of the eye. The transparent media of the eye are to be considered merely in the light of certain optical instruments, which are calculated so to act upon the rays of light as to bring them to a focus on the retina. You can imitate them by an artificial instrument. All the parts of the eye are quite mechanical; they act just according to the laws which affect media of a certain density out of the body. In elderly persons the refractive powers of the eye become gradually diminished, so that the rays of light are not brought to a proper focus on the retina; the refractive powers are lessened, so that they do not converge the rays with sufficient power for the purpose of vision; hence such a person is unable to see objects situated near the eye—he cannot read at an ordinary distance, nor see to mend a pen, nor perceive minute objects placed near the organ of vision—the refractive powers of the eye not being adequate to bring the divergent rays which proceed from near objects to a focus; yet such a person can see distinctly objects at a greater distance. He cannot, perhaps, see what is the hour by a watch held in his hand, but he will tell you what o'clock it is by looking at a very remote

church dial. This is called far-sightedness, or *Presbyopia*—that is, a state or change of vision consequent on old age. It occurs sometimes about the middle period of life, but more generally after, or as old age comes on.

The remedy consists in the employment of convex glasses—the use of spectacles; and the individual must select glasses of such a power as will enable him to read or see objects at the ordinary distance with facility. He merely wants to use this optical aid for near objects; remote objects he is able to see perfectly well without glasses. But as this is a change of the eye which is progressive, he finds, a certain time after he has selected the spectacles, that they do not answer the purpose, and he is obliged to use more powerful glasses.

An opposite state to this is that which you find incidental to young persons—near-sightedness, and is termed *Myopia*. It seems to be a natural defect of the condition of the eye, by which its refractive powers are too considerable; the rays of light are brought to a focus sooner than they ought to be, so that they diverge and are scattered again, before striking on the retina, and thus indistinctness of vision arises.

This requires optical aid of a different kind; in fact it requires glasses exactly opposite to those required in presbyopia. The near-sighted individual requires concave glasses to assist him in viewing remote objects. He is able to see all objects well that are near to the eye; in fact, he can see them when much nearer than the distance at which they can be observed by others, the refractive powers of his eye being stronger than in those of most individuals; but he loses the sight of distant objects. A near-sighted individual cannot see the countenances of persons in a large room; he cannot distinguish the features of players on a stage—he cannot describe pictures, if they be hung at a certain height, in a room;—for all these purposes he requires concave glasses. This is a defect of vision found in young persons; perhaps at from fourteen to eighteen years of age they first begin to detect it.

Young persons do not like the idea of using glasses, and they want to know whether or not they may safely do so—whether the employment of glasses is likely to interfere with the sight permanently. You may say, certainly, in such a case, that they are absolutely necessary for the purpose of vision; that their use is not attended with any injury to the eye; that the employment of glasses is not likely to render the eye worse, or to make vision more imperfect. It is better that a person so circumstanced should use such glasses as will enable him to see objects without any unpleasant effort of the eye; he will do better with assistance of that kind, than by attempting to strain the eye without it.

It should be observed, however, that he ought to use a glass that will just enable him to see easily and clearly, and not to employ one that will occasion any fatigue to the eye. With a glass of the latter kind he may be enabled to see objects better than with one of another sort; but if it produce any uneasiness about the eye, it is a clear proof that the instrument is too powerful, and would certainly injure the sight.

I should have mentioned to you, in speaking of *amaurotic* affections, another circumstance with respect to the imaginary objects that are seen before the eyes, to which the name of *muscæ volitantes* is given. I stated that the affection often commenced by these appearances; but there are many cases in which persons are thus deceived, without any immediate or ultimate impairment of vision. It is important, therefore, that you should be able to distinguish between the cases in which the appearance of these imaginary objects may be considered as denoting the probable occurrence of amaurosis, and those in which they merely arise from a functional disturbance of the retina. Persons see before their eyes objects which present almost every variety of figure, colour, and combination, that you can describe. Very often they describe them to be like black spots or specks: often they compare them to the minute black particles that float about in the atmosphere of London; sometimes they see one or more of these, sometimes a considerable multitude seem to float directly in front of the eye, and interposed between it and the objects to which the sight is directed; sometimes there are threads, or lines; sometimes reticulated objects, like net-work; sometimes the objects are of a luminous nature, like sparks or flashes of fire; sometimes a sort of transparent vesicles, connected together like a chain before the eye; and these appearances generally follow the movements of the eye. This is apt to occur in persons of an irritable or nervous temperament, and in those who have been affected by any depressing cause, who have experienced great distress of mind—as from alteration of circumstances. It is not attended with any symptoms of change, either in the condition of the retina or in the state of the pupil. The patient is able to discern minute objects just as well as he did before. We find that the iris moves, and that the pupil changes its dimensions, just as in the natural state; and these circumstances enable us to determine in a particular case, that the affection is merely a functional disturbance of the retina, and does not depend upon any actual disease in the organ. If the vision of minute objects is perfect, if the motions of the iris are perfectly performed, if the pupil contracts and dilates, we may confidently assure the patient that there is no danger of

the loss of sight. If, on the other hand, we find that vision is impaired, and that the motions of the iris and pupil are also altered, unquestionably we must regard the appearance of *muscæ volitantes* as the precursors of an amaurotic affection.

Where the appearance of *muscæ volitantes* is a symptom denoting simply functional derangement of the retina, we do not usually succeed in removing them. The means which we may adopt may lessen the symptoms in degree, the patient will become gradually accustomed and indifferent to them; but the objects are still before the eye, and he continues for many years to see them. We have cases occasionally in which such objects have been present for ten, fifteen, or twenty years, without producing any very serious affection of vision.

Individuals are sometimes met with who are unable to discern the difference of colours, or to distinguish colour at all, so that when they look at a painting, for example, they are merely sensible of a representation of light and shade, and do not discern the distinction between the colours. Such individuals exhibit, on examination, an apparent perfection in the construction of the eye; there seems to be no deviation from its natural state; and the patient is able to see objects in all other respects quite perfectly. He is quite able to discern minute objects, to see every thing, in point of fact, as other persons do, excepting as regards the distinguishing colours. This, I apprehend, must be considered as a natural defect, either in the eye or in the brain. The phrenologists are of opinion that there is a particular part of the brain which has for its function the judgment and discrimination of colours, and they say that in these cases there is a defect in the structure of that part of the brain; that the eye is perfect, but that the brain is imperfect. We certainly do find that the eye is, in appearance, essentially perfect; at all events, this is a state which we have no power whatever of remedying.

There are instances in which the two eyes do not move in harmony together, where they are not directed as they should be to the same object, and the state termed squinting consequently arises—one eye being directed towards the object which the individual is contemplating, while the other diverges from it, and either looks outwards or inwards; hence the diverging or converging squint, or *Strabismus*. We frequently see this at the commencement of an amaurotic affection, where the one eye being affected, and the other being in its sound state, the difference of power in the two eyes produces a want of harmony in their motions; hence strabismus, and double vision. It not uncommonly precedes disease of a serious kind, of the head—apoplectic

and other affections. There are other instances in which squinting arises, particularly in young subjects, without our being able to discern any cause for it. When it takes place as the precursor of an amaurotic or apoplectic attack, the treatment we adopt, in consequence of the principal affection, if it be successful, removes the squinting.

But in some cases, particularly in young persons, we are really at a loss to ascertain the cause of the affection, and we consequently experience difficulty in finding a remedy for it. It is said that squinting may be produced from disturbance in the state of the stomach or alimentary canal; this of course will be evidenced by the proper symptoms, and, if it exist, may be remedied. There are some cases in which we may succeed in remedying squinting by means directed to this disturbance, but there are other instances in which we do not; where, after employing means calculated to act on the stomach and bowels, the squinting still continues. Under such circumstances it has been recommended to tie up the sound eye, and compel the individual affected to employ the squinting eye only; for I must observe to you, that although the squinting eye is turned away from the object at which the person looks when both eyes are open, yet if you shut the sound eye, then the other is directed straight forward, the patient being compelled to use it. The sound eye may be tied up, in a child, for a quarter or half an hour, two or three times in the course of the day. I have seen instances in which this mode of proceeding has removed the squint, and I have also seen others in which it has been employed without effect. In fact there are cases in which the cause, as I have already said, cannot be detected, and where, consequently, we are really at a loss to suggest any remedy whatever.

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#### EXPERIMENTAL AND CLINICAL RESEARCHES

ON THE

#### PHYSIOLOGY OF THE HEART'S ACTION.

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It is unnecessary for us to prosecute the analysis of Dr. Corrigan's paper. If the reader has still any doubt that the impulse and first sound are occasioned by the ventricular contraction, and are synchronous with the arterial

pulse, we request him to suspend his opinion until we have offered him still more irrefragable evidence in a subsequent part of this paper. If his doubts be already dispelled, he has only to apply the principles which we advocate to the remaining propositions of the hypothesis under consideration, and he will at once perceive that they are successfully annihilated by the test.

To a few experimental points alone we shall now succinctly advert; as an exposition of their inaccuracies will contribute to the general elucidation of the subject, and a knowledge of the sources of fallacy will be convenient to others, who may hereafter feel disposed to prosecute similar inquiries.

Dr. C., wishing to prove that the first or long sound of the heart is not referrible to the same cause as the pulse, says—"Each of us selected, from among his friends not in the profession, a person on whose delicacy of ear and accuracy of observation he could rely. Of these, one was a gentleman who has been blind for some years, a man, however, of the highest mental powers. It is needless to remark, that, from this peculiar circumstance, loss of sight, his other senses have become extremely acute. The persons thus selected were carefully kept in ignorance of either our own views, or those entertained by others. After they had to their satisfaction distinguished the two sounds and the impulse through the stethoscope, they were instructed to lay a hand on the pulse, and note the order in which each phenomenon seemed to them to occur.

"The opinions expressed by these persons were as follow:—'The impulse and dull sound came before the pulse. The dull sound had terminated when the pulse struck the finger. The short sound came exceedingly quick after the pulse. The first sound was long, the second short, not half the length of the first; and there was a short interval between the two sounds.' These observations, made by our non-medical friends, we hold to be peculiarly valuable: they are those of persons unprejudiced, made without a knowledge of any theory: they are the records of facts, the persons who recounted them not knowing for what purpose they were to be used. On the dull sound and impulse preceding the striking of the pulse, there was not amongst them even a hesitation; all



declared at once that the impulse and dull sound preceded the pulse, and by a well-marked interval. On the termination of the dull sound there was a slight difference, one asserting it to have ended when the pulse struck the finger; another supposing it and the pulse to finish together. When the heart beat quickly, the dull sound and pulse seemed to terminate together; but in the horse, and in slowly-beating hearts, the pulse terminated the long sound, as if with a blow, or, as the tap of a finger terminates the vibrations of a glass."

No method of self-deception could, in our opinion, be more complete and yet more specious than that employed by the author in the above experiment.

We have not unfrequently had occasion, during a series of years, to witness the early attempts of individuals commencing the study of auscultation; and we cannot recollect an instance in which one, unaccustomed to the stethoscope, could satisfactorily distinguish the two sounds of the heart on the first application of the instrument. Often, indeed, the auscultator has imagined that he recognized them; but being desired to make motions, or count *one, two*, synchronously with the sounds heard, the total discrepancy of his signs with the radial pulse clearly evinced that his perception of the phenomena was extremely imperfect, if not wholly illusive.

A recent repetition of the same experiment on a large scale has been productive of the same results: and it is, therefore, a subject of astonishment to us, that the auscultators employed by the author could not only intuitively distinguish the two sounds, but could even estimate their length and rhythm with minute precision—could, for instance, divide them into long, or dull and short; "the second not half the length of the first;" the long "terminating just before the pulse struck the finger;" "the short coming exceedingly quick after the pulse;" and "a short interval between the two sounds." These are points on which the most experienced auscultator would speak with deference to the opinion of others; and we therefore beg leave to dissent from the author's affirmation, "that such observations are peculiarly valuable," as being "those of persons unprejudiced, made without the knowledge of any theory," "the record of facts,"

&c. They are, what we should, *à priori*, expect them to be—the inevitable errors of incompetent judges.

The author pronounces the second sound of the heart to result from the collision of the ventricular parietes after their systole, which is performed "with the rapidity of lightning."

We shall allow him to state his own case, and then endeavour to shew that he has failed to prove his point.

"We were, (says he,) so often disappointed in our attempts to discover the cause of this sound (*viz.* the second), that we had often given it up in despair, when having ascertained that it is imitated most exactly by the falling back of a valve upon its birth, and that the sound is precisely what may be produced by the simple impulsion (as in the case of the valve) of two surfaces meeting, we turned to the heart, to discover if there were among its actions any thing similar.

"The ventricle contracts powerfully, and, as already said, with the rapidity of lightning; not slowly, as Laennec strangely asserts. The impulsion of the internal surfaces against each other, must, from such a contraction, be sudden and strong, and we might *à priori* expect it should resemble strongly that produced by the flapping of a valve, or, what is the same thing, the striking together of two non-vibrating substances. The supposition that the short sound was caused by the impulsion against each other of the sides of the ventricle, required experiment to support it, and to institute a satisfactory one was not easy. At length the following was adopted:—Into the pulmonary artery of a heart taken from the body, a *gum elastic* tube was fastened; the two *venæ cavæ* were tied, after all the air had been carefully expelled from the cavities of the heart, and all were immersed in water. The loose extremity of the tube was attached to a small pump, which, as well as the gum elastic tube, was filled with water. Our object was, to bring the sides of the ventricles together with an impulsion as quick as its own action could. After we had distended the ventricle, by pressing down the piston of the pump, we produced a vacuum by suddenly checking and drawing the piston quickly back. The influence of this action was of course extended to the ventricle. The weight of the external water and atmosphere immediately acted upon the outer surface of the ventricle, expelling the fluid

from it along the tube, and bringing its sides together, precisely as if by an inherent power in themselves. Each time that they thus came suddenly together, the impulsion produced a short sound, imitating with the greatest nicety the second sound of the heart. We could make the sound weaker or stronger, according to the force with which we made the sides approach each other. We repeated the experiment on the left ventricle with the same result. It is obviously a matter of indifference whether the power that brings the two sides together be, as in this experiment on the dead heart, an external power, or whether it be, as in the living, its own inherent contraction."

Before repeating this experiment it was obvious to us, on physical principles, that with a gum elastic tube, (by which we supposed the author to mean a tube of the usual calibre of which those instruments are made,) the experiment must fail, — not only because so small a tube could not exhaust the ventricle with sufficient rapidity to bring its sides in violent collision; but because the elastic walls of the pulmonary artery would close, by the atmospheric pressure, over the orifice of the tube the moment a vacuum was generated. We accordingly found that, notwithstanding every expedient to keep the artery tense, it was impossible to withdraw the piston an inch.

We next employed a syringe with a tube of the full size of the artery, and introduced it as deep as the very mouth of the ventricle. The result was precisely similar, taking into consideration the greater diameter of the tube. The piston admitted of being withdrawn somewhat further, but the parietes instantly closed over the orifice, producing by their collision an indistinct flapping sound, while the body of the ventricle, however, remained unexhausted. That the author succeeded no better than ourselves is manifest from his own avowal; viz. "it is not probable that in drawing back the piston, we removed the fluid so perfectly as to bring the inner surface of the ventricle in contact through its whole extent, and yet the sound was heard, and loud. Indeed, as far as we could judge, we should be inclined to say that it was not produced near the apex, but by the comparatively smooth surface of the ventricle near the base."

It is obvious that the sound was pro-

duced by the closure of the ventricle upon the mouth of the tube; and it is too palpable to require comment that an artificial action thus produced bears not the most remote analogy to the natural ventricular contraction.

While repeating the above experiment we prosecuted the inquiry a little further, with a view of ascertaining how far it was probable that either of the heart's sounds might be dependent on the action of the valves. For this purpose we proposed to try whether it was possible to elicit a sound by artificially expanding the valves. Accordingly, having introduced the large tube into the aorta, about two inches above the valves, we withdrew the piston, so as to exhaust the vessel, and then suddenly and smartly returned it. A flapping sound was certainly produced, and was distinctly audible through the stethoscope applied to the ventricle; but it was almost equally produced when we compressed the artery immediately above the valves. Hence we remained uncertain whether in the former, as in the latter case, the sound was referrible solely to the sudden expansion of the vessel, or whether it was aided by the retrocession of the valves. After varying our attempts in every conceivable manner, we were brought to the conclusion, that such experiments would not justify any inferences respecting the natural action of the valves, as in whatever mode the sound was produced, it admitted of being referred to causes independent of the valvular action\*.

To Dr. C.'s application of his views to the pathology of the heart (which, we believe, will be found by those practically conversant with the subject to be the most theoretical and objectionable part of his production) we shall advert incidentally at a more convenient period.

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We now proceed to the more immediate object of this paper—the communica-

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\* We have here to state, that the experiments hitherto detailed were performed at St. George's Hospital, in the presence of a number of the medical officers, and other gentlemen attached to that institution. To Mr. Babington, surgeon to St. George's, Mr. S. Lane, lecturer on anatomy, Mr. Smith, house-surgeon, and Mr. Johnson, we are particularly indebted, for their valuable aid in performing the experiments, and their patient and unbiassed scrutiny of the results.

tion of further experiments, which, corroborated by pathological consideration, will, we trust, be found decisive of the long controverted question respecting the cause of the motions and sounds of the heart.

Although, however, warned by the failures of our predecessors, we have conducted our investigations with extreme caution, and deduced our inferences with sceptical slowness, we have not the presumption to suppose that others may not discern objections which have eluded our own penetration. We wish, therefore, rather to propose our views for examination, than to uphold their accuracy by assertion.

At the conclusion of our experiments and researches hitherto detailed, we entertained the following impressions respecting the state of the question:—

That in the small animals the auricular systole took place immediately *before* the ventricular, and not *after*, as supposed by Laennec, we regarded as certain, both from the evidence of our own experiments and from the concurrent testimony of the old physiologists.

It was to be presumed that the same occurred in larger animals, but it remained to be proved.

That the *impulse* and *first sound* were referrible to the ventricular contraction, and not to the auricular, we were equally persuaded, 1st, because the pulse, unquestionably a result of the ventricular systole, coincided so nearly, if not in every case perfectly, with the impulse and sound, that these phenomena did not admit of being ascribed to any but the same cause; 2d, because clinical observations had proved to us, that certain anomalous modifications of the heart's impulse and first sound corresponded with certain morbid conditions of the ventricular, but not of the auricular, parietes. To this subject we shall hereafter revert.

That the *second sound* did not depend on the auricular systole was indubitable; because the one was prior, and the other subsequent to the ventricular contraction.

That it did not depend on the expansion of the auriculo-ventricular valves was equally certain; because the action of those valves takes place at the commencement of the ventricular contraction, whereas the sound occurs at its termination.

That it was not due to any other action of the auriculo-ventricular valves was obvious from physical considerations of their anatomical structure.

That it was not ascribable to the retrocession of the semilunar valves we entertained a strong presumption, from having found the sound unimpaired, though the valves, on one side at least, were rigid with ossification; and the presumption amounted almost to certainty from our having found the sound not only undiminished, but increased, in cases of enormous dilatation of both ventricles\*, in which it was impossible that the cavities could ever empty themselves; and where, consequently, the motion of the valves must have been impeded by the constant pressure of fluid on both sides.

It remained, therefore, to be ascertained what was the cause of the second sound. As this sound is sometimes attended with *bruit de soufflet*, a phenomenon referrible to the motion of the fluids, it was manifest that the natural sound, likewise, was in some way dependent on the same circumstance. Hence it became a question, what was the nature and cause of that motion of the blood accompanying the second sound? In more general terms, what was the state of the ventricles, with reference to the fluids, at the moment when the second sound occurred, and during the subsequent period of repose? This appeared to us the hinge of the whole subject.

It was irrational to suppose that the ventricle, after its contraction, remained permanently braced during the interval of repose, as such a supposition would imply unintermitted labour of the muscle. We were therefore compelled to admit a relaxation, and this involved an ulterior admission, that of a diastole or expansion; not only because the relaxation of a muscle presupposes the elongation of its fibres, but because, granting the ventricles to be merely passive during their relaxation, the gravity of the blood in the auricles, aided

\* For example: Wm. Lambert, St. George's Hospital, Sept. 16th, 1829, under Dr. Chambers. Our notes state that the left ventricle exceeded in capacity the largest orange, and was extenuated, in one point, to a mere membrane, and over the greater part to the thickness of one, two, or three lines. The right was little less in capacity, but its parietes were in parts four or five lines thick: all the valves were healthy. "Both sounds are audible at the clavicles: they are very little louder than natural."



by the vis-a-tergo, would cause its descent into the ventricles. We had, furthermore, observed in the frog, when the heart was acting slowly, that the ventricular systole was followed by a diastole and partial distention with blood, independent of the auricular contraction, and that the ventricle remained quiescent in this state of partial distention until again stimulated by the auricle. These phenomena occurring during action of the heart, rendered artificially slow, afforded a presumption (we do not say more) that the same occurred in animals the action of whose hearts was naturally slow.

Was, then, the influx of blood accompanying the ventricular diastole the cause of the second sound? An objection seemed to present itself in the circumstance that the sound was louder and smarter than could easily be accounted for on the supposition of its being produced by so indolent an action as the descent of blood merely by its own gravity and the venous vis-a-tergo: an active dilating power appeared requisite. To suppose that this power resided in the muscular fibre involved a contradiction, as it was tantamount to saying that a muscle could relax actively\*. That it did not reside in the reciliency of the lungs was certain, because the heart continues to act though the lungs be collapsed. The only remaining source to which an *active* dilating power could be referred was the ventricular elasticity, and this appeared scarcely adequate to the production of the effect.

Notwithstanding pathological observations, corroborated by what we had seen in the frog, led us to infer that an influx of blood into the ventricles at their diastole did occur, and with sufficient energy to produce the sound in question—for we had found that, in hypertrophy and dilatation, the second sound was accompanied by a very strong shock, which, from its appearing to be of a *receding* nature, we have, for five or six years, designated in our case-books by the epithet *back-stroke*; and this motion, and the accompanying sound were, *ceteris paribus*, stronger in proportion as the hypertrophy and dilatation were greater†—still, how-

ever, that the influx of blood during the ventricular dilatation was the cause of the second sound, was only conjectural, and it required demonstrative proof before it could be assumed as a fact.

How, then, was this, and the collateral questions, to be determined?

It appeared to us that the only possible mode was by contriving to hear the sound at the same moment that the action of the heart was inspected and felt, since it could thus be unequivocally ascertained with what motions the sounds respectively coincided. Small animals were obviously insufficient for this purpose, as in them the sounds are too indistinct, the motions too rapid, and the impulse too feeble, to afford satisfactory data. To the larger animals, therefore, we at once turned our attention, as presenting the only avenue which was likely to conduce to a solution of the difficulty\*.

The whole subject, then, seemed to resolve itself into the following questions, which we drew out and proposed to our coadjutors, before the operation, as the points for investigation:—

1. Do the auricles contract immediately before the ventricles?
2. Does an interval occur between the two contractions, or is the succession so rapid as to amount to continuity of action?
3. Does the ventricular contraction cause the impulse, pulse, and first sound?
4. Do the ventricles contract completely, and do they remain closed and empty, during the interval of repose? Or—
5. Do the ventricles dilate again immediately after their systole; and is this dilatation attended with an influx of blood from the auricles?
6. Is the influx of blood into the ventricles during their diastole the cause of the second sound? If not—
7. What is the cause of the second sound?

EXPERIMENT I.†—An ass, of which

other writer, has noticed the *back-stroke* as a sign of disease.—*Vide Traité de l'Auscult.* 2de éd. t. tom. ii. p. 395.

\* We have thought it desirable to possess the reader with these preliminary particulars, (though we have to apologise for the tediousness of the detail) in order that he may be prepared to view the experiments in all their relations, and enabled to form a just estimate of their value.

† The experiments were conducted, by the politeness of Mr. John Field, at his veterinary establishment in Oxford-Street. We have to acknowledge

\* We believe, however, that this point is open to further investigation.

† The auricular impulse was not overlooked by Laennec, but we are not aware that he, or any

the pulse and impulse were 48 per minute, was instantaneously deprived of sensation and motion by a smart blow on the head. The trachea was opened, a large bellows-pipe introduced, and artificial respiration maintained; while, at the same time, the left ribs were sawn through near the sternum, and forcibly bent back and broken\*, so as widely and completely to expose the heart immediately behind the left shoulder: this was accomplished in less than five minutes.

The pericardium was next opened, and the auricles and ventricles fully displayed. The action of the heart was at first quick, tumultuous, quivering, and irregular; but after the lapse of about three or four minutes it became regular, and slower. The auricle was now seen to contract first, and the ventricle instantly afterwards; or, in more descriptive language, a slight contractile motion, accompanied with very inconsiderable diminution of volume, was observed to commence in the auricle, and to be propagated rapidly to the ventricle. It was not, however, so quick that it could not easily be followed by the eye; yet it seemed to be rather a continuity of action than to consist of two consecutive parts.

Most of the spectators had difficulty in believing the auricular movement to be its contraction, as they were prepared to expect a much greater diminution of its size. For the present, therefore, a note was not dictated on this subject.

The ventricular contraction appeared, and was felt by the hand, to consist of a sudden energetic jerk, accompanied with a depression of the centre or body of the ventricle. This contraction was heard (through the stethoscope, applied immediately to the organ) to be accompanied by the ventricular sound. A note was accordingly dictated, that,

the able assistance of Messrs. S. Lane and Smyth, by whom the operative part was performed with the utmost adroitness. Mr. Babington, surgeon to St. George's, was unfortunately absent on the present occasion. To a number of gentlemen, but particularly to Dr. Hewett, physician to St. George's Hospital, and Mr. Oswald Beale Cooper, we are indebted, for their aid during the experiment, and their attestation of the results.

The notes were written by Mr. F. Julius to the conjoint dictation of the party, during the progress, and immediately after the conclusion of each experiment; and they were finally revised and signed.

\* This plan was adopted in preference to cutting, in order to obviate hæmorrhage from the intercostal vessels.

1. *The ventricular sound was heard whilst the ventricle was seen to contract.* At an interval of time equal to that which intervenes between the first and second sounds of the heart, the contraction was followed by a sudden, jerking re-expansion, or diastole, which appeared to *elevate the body of the ventricle more than the previous contraction.* Hence one of the party (Mr. Lane) expressed his opinion that it was the *diastole*, and not the *systole*, which occasioned the impulse. This opinion rendered it instantly necessary to repeat all our observations. The stethoscope was accordingly resumed, and several times applied by Mr. Field and the writer alternately, each counting one, two, synchronously with the sounds which he heard and the impulse communicated to his ear; while others applied their hands to the ventricle, and at the same time inspected its motion. It was now proved, to the perfect satisfaction of Mr. Lane and all present, that the sound I, and impulse felt by the auscultator, coincided with the *visible depression (i. e. contraction) of the ventricle and the impulse felt by the hand.* It was therefore dictated that, 2. *When the action of the heart was become slower (supposed to be about forty per minute) and was becoming feeble, the ventricular sound and impulse were heard, seen, and felt, both by the ear and hand, to be simultaneous.*

At an early part of the experiment it had been unanimously agreed that the ventricle never contracted fully, though it was then acting with great power. It was, therefore, dictated that, 3. *The ventricle never contracted fully.*

4. *It remained apparently full during the intervals of repose. (i. e. from the conclusion of the diastole to the commencement of the ventricular contraction.)*

On interposing the hand between the apex of the heart and the rib, which had been left above that part, the fingers were struck vigorously by the apex at the moment when the body of the ventricle was in the act of retraction. Though the attention of the experimenters was drawn to this circumstance, it was not sufficiently remarked or recollected by all to justify the dictation of a note.

As the action of the heart, after ceasing to be tumultuous, became somewhat feeble, the second sound was

never very audible. It was distinctly heard, however, by Mr. Field and the writer; but as the others could not satisfactorily recognize it, a general note was deemed inadmissible, and a by-note only was dictated, the point being referred for further investigation till the next experiment.

By-note.—*Mr. Field and Dr. Hope listened with the stethoscope alternately, and counted one, two, in unison with the sounds which they heard; while the others saw that 1 coincided with the ventricular systole, and 2 with its diastole.*

This first experiment was not considered conclusive. In consequence of the turbulence of the heart's action at first, and its feebleness at last, the time favourable for observation was too brief; and consequently a majority of the party had not complete confidence in the accuracy of their observations. This diffidence appeared from the second experiment to be greater than the case warranted; and it is to be ascribed to the slowness and difficulty with which wary experimenters admit the evidence of their senses on a first inspection. The feeling, however, and still more the objection of Mr. Lane, in the progress of the examination, were useful to prove that there was no bias in the minds of those present towards the conclusions ultimately adopted; and this consideration gives additional weight to the second experiment, which was performed immediately after the first.

EXPERIMENT II.—The heart of an ass was exposed to view in the same manner as before, but with still greater celerity. For about a minute only the action was quivering and irregular; it then fell to its natural standard (40 to 50 per minute), became perfectly regular, and the ventricular contraction, as felt by the hand and the stethoscope, was performed with a power which can scarcely be imagined from an examination on the outside of the chest.

Three successive motions—namely, the auricular systole, the ventricular systole, and the ventricular diastole—were now distinctly recognized and acknowledged by all who witnessed them. The stethoscope was applied to the ventricle, and the two sounds were clearly and unequivocally heard even by those unaccustomed to the instrument. Five gentlemen listened deliberately twice over, and two of

them three times, before it was dictated that, 1st, *Drs. Hewett and Hope, and Messrs. Lane, Field, and Cooper, listened successively through the stethoscope applied to the ventricle, and severally counted one, two, synchronously with the sounds which they heard; while the others ascertained, by the touch and sight, that the sound 1 coincided with the ventricular systole, and the sound 2 with its diastole.*

This part of the experiment was so deliberately performed that it occupied from ten minutes to a quarter of an hour, as near as could be judged from the whole time expended (from twenty to twenty-five minutes), and each of the experimenters was asked whether he was satisfied, whilst he had still an opportunity of renewing his examination.

It was now submitted to investigation how the ventricular systole could occasion the impulse, as the body of the organ appeared to *recede* during that motion. The result was the following note:—

2. *While the ear rested on the stethoscope applied to the middle of the ventricle, the impulse was felt by the auscultator to coincide with the systole, notwithstanding that the body of the ventricle appeared to be receding at the moment the impulse took place.*

If, therefore, an impulse was occasioned by the body of the ventricle while apparently receding, *à fortiori*, it was occasioned by the apex, which, there was every reason to be certain, was thrown forward; not only because that motion was felt and seen, but for physical considerations hereafter to be more fully described.

During the course of the experiment the action of the auricle was again examined. Its anterior edge and surface only were in sight, the root and sinus being concealed behind the ventricle. It was noted that—

3. *The auricle never emptied itself, and its contraction was always very inconsiderable. The anterior edge and surface were seen to retract with a rather sudden motion; but as the extent of the motion was very inconsiderable, it had the appearance of being feeble.*

The contraction of the auricle was so much less than there was reason to anticipate, from the extent of its action in smaller animals, that it was questioned whether it was, in the present



instance, performed with the natural vigour. The extraordinary power with which the ventricle acted favoured the affirmative; and as the proportion of the auricle to the ventricle is singularly smaller in large animals than in small, there is reason to suspect that they perform a less important function in the former.

The inevitable conclusions deducible from these experiments are, that—

#### *Of the Motions of the Heart—*

1. The auricles contract so immediately before the ventricles that the one motion is propagated into the other, almost as if by continuity of action, yet the motion is not so quick that it cannot readily be traced with the eye.
2. The extent of the auricular contraction is very inconsiderable, probably not amounting to one-third of its volume. Hence the quantity of blood expelled by it into the ventricle is much less than its capacity would indicate.
3. The ventricular contraction is the cause of the impulse against the side; first, because the auricular is too inconsiderable to be capable of producing it; second, because the impulse occurs after the auricular contraction, and simultaneously with the ventricular, as ascertained by the sight and touch; third, because the impulse coincides with the pulse so accurately as not to admit of being ascribed to any but the same cause.
4. It is the apex of the heart which strikes the ribs.
5. The ventricular contraction commences suddenly, but it is prolonged through the interval which intervenes between the first and second sounds.
6. The ventricles do not ever appear to empty themselves completely.
7. The systole is followed by a diastole, which is an instantaneous motion, accompanied with an influx of blood from the auricles, by which the ventricles re-expand, but the apex collapses and retires from the side.
8. After the diastole, the ventricles remain quiescent, and in a state of apparently natural fulness, until again stimulated by the succeeding auricular contraction.

#### *Of the Sounds.*

9. The *first sound* is caused by the systole of the ventricles.

#### *Of the Rhythm.*

Order of succession—

- 1st. The auricular systole.
- 2d. The ventricular systole, impulse, and pulse.
- 3d. The ventricular diastole.
- 4th. The interval of ventricular repose, the termination of which is synchronous with the auricular systole.

#### *Duration.*

This is the same as indicated by Laennec, viz.

- 2d occupies half the time, or thereabout, of a whole beat.
- 3d occupies one-fourth, or at most one-third.
- 4th occupies one-fourth, or rather less.
- 1st occupies a portion of the same time as fourth.

Considerations respecting the mechanism of the motions and sounds, and pathological evidence corroborative of these views, must be reserved for another occasion.

13, Lower Seymour-Street,  
Portman-Square,  
Aug. 9th, 1830.

#### MR. ST. JOHN LONG'S LINIMENT.

*To the Editor of the London Medical Gazette.*

SIR,

AN article having lately appeared in your journal relative to the “discoveries” and “science and art of quackery” of Mr. St. John Long, it may be, perhaps, worthy of your notice to be informed of the result of the experiments of two individuals, who have been endeavouring conjointly to find out his *panacea for all diseases*. After trying various stimulants, among which was the one mentioned in your paper on the subject, and which, although it produced vesicles, did not appear quite to answer the purpose, they have at length discovered that the following recipes will produce the exact effect upon the skin described by Mr. L.'s patients.

R Acid. Nitr.-Muriatic. ʒij.

OL Terebinth. ʒj.

— Camphora, ʒv. M. ft. linimentum.

Or, which is the better preparation of the two—

R Acid. Nitr.-Muriatic. ℥ij.

Ol. Terebinth. ℥j.

Axungia, ℥v. M. Melt the axungia, and then add the other ingredients, and stir it until it is quite cold.

Either of these liniments rubbed upon the skin with a sponge, will, in three or four minutes, cause it to be highly reddened, and the capillary vessels to be injected with blood. If the rubbing be continued, small pustules, here and there, containing a transparent limpid fluid, will make their appearance; and if it be still persisted in, the part becomes excoriated, and an exudation of a thin clear lymph is the result. During its operation, the patients first feel warmth in the part where it is applied, then smarting, and at length actual pain. With regard to the humour Mr. L. pretends to extract, this appears to be nothing but the residue of the liniment left upon the skin; and as to its affecting the part only where the disease is situated, it certainly is true that it does not seem to act upon the whole of the surface of the skin on the chest alike, but this arises from some parts being more tender than others; hence the skin on the superior parts of the chest requires less rubbing with the liniment than that covering the ribs.

And now we have so far exposed the *quackery* of Mr. St. John Long, let us at least give the man his due. Is the application of such a preparation as above described upon the skin of any service in phthisis, or not? We have tried it in several cases, and in all, the patients have expressed relief after its employment. They have had less cough, they have breathed more freely, and the expectoration has been diminished in quantity. We have only employed this remedy a fortnight, and hardly that; so that what permanent good may result from it we know not. We cannot, however, but acknowledge that we think it might be a useful addition to the means we already possess, to produce *immediate* counter-irritation. We are fully aware that a blister is attended by a like result, but, at the same time, its action is slow, and its after-effect is such that it is some time before it can be repeated, and it cannot be applied over any extent of surface. The antimonial

ointment, likewise, is another counter-irritant; but this also is uncertain in its action and slow in its operation, and it cannot well be used again until the pustules arising from it have healed. The nitro-muriatic acid liniment, however, produces the effect almost instantaneously, and can be employed on any extent of surface without those inconveniences; for although it gives rise at the time to a profuse determination of blood to the skin, yet this gradually subsides, and it can be re-applied (if it has not been improperly used) as often as we may consider necessary.

When we consider the pathology of the diseases of the lungs, and the sympathy existing between the skin and these organs, we must allow that a sudden and extensive determination of blood to the surface might be attended with the greatest possible advantage. We well know that if the cutaneous vessels are checked in their functions, a large flow of blood is determined to the lungs, and thus they have a double office to perform. If, then, the lungs be diseased, and in consequence of this disease, and the morbid action kept up, there is a greater proportion of blood in them than natural, surely, admitting the sympathy between them and the skin, an almost instantaneous determination of blood to the surface, frequently repeated, might at least relieve, if not materially tend to diminish, the tendency to disease. We do not mean to say that it would *cure* phthisis, or remove tubercles already formed, but certainly it might assist in keeping them dormant, and in preventing their ulceration, and thus arrest their progress towards the destruction of life. Almost every morbid anatomist must have observed, that the lungs are frequently filled with tubercles, and yet that they were not the immediate cause of death. If, therefore, it were possible to keep tubercles, which are already formed, inactive, it might be the means in many instances of prolonging life, and the remedies here proposed appear to us, at least according to the pathology of the disease, to be the most likely manner of effecting this desirable object. In chronic catarrh, pneumonia, bronchitis, asthma, and many other diseases of the chest, this plan of treatment seems likely to be attended with the greatest advantage. We think, therefore, from the effects we have seen

it produce, it deserves a fair and impartial trial.—We are Sir,

Your obedient humble servants,  
S. AND S.

Aug. 10, 1830.

P. S.—We have not yet tried the air that is breathed by Mr. L.'s patients, but from the manner in which it affects the urine, there can be but little doubt that it is impregnated with turpentine, or some of the balsamic gums. It may, perhaps, be necessary to state that the patients who have used the liniment have belonged to hospitals.

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ANSWER TO DR. VENABLES' CRITIQUE ON THE CASE OF CAPTAIN MOIR.

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*To the Editor of the London Medical Gazette.*

SIR,

I HAVE read, in your last number, a well-written criticism on the medical treatment of the poor fisherman, for the infliction of whose wound the unfortunate Captain Moir suffered the last punishment of the law; and, in common with the author of that article, I exceedingly lament that the law of the case did not admit of Dr. Venables' evidence.

In making these remarks, however, I am led to notice, with unqualified censure, the severe and uncalled for attack upon the professional treatment of the wounded man. Excepting to one of the medical gentlemen in question I am personally unknown, and him I have seen but twice, and that incidentally. I can, however, readily admit that they may not have had the experience in the treatment of gun-shot wounds that Dr. Venables had in the ordinance department of the army at Valenciennes; but even this experience occurred so long since, that I suspect he has forgotten the lessons he there learned; and I am strongly inclined to believe that he has also overlooked the directions Mr. Guthrie gives, about the administration of brandy to wounded men, where there is great exhaustion of the sensorial powers (see his work on Gun-shot Wounds). Again: every surgeon will admit that there is no practice more common than to give stimulants at an operation, with the view of

pointing out to the operator such vessel as may require a ligature. Now it appears that was the case on the first occasion of brandy being administered; and may not the rules laid down by Mr. Guthrie have authorized its repetition? It is most unjust in any man to impugn another's practice, without having seen the patient prescribed for.

There is yet another circumstance I beg to call the reader's attention to—namely, the course the ball took, by which Dr. Venables says the humeral artery could not have been wounded. Now I assert that it does not appear from the evidence that the ball passed behind the humerus, so as to avoid the artery; the evidence only proves the entrance and escape of the ball. Now I maintain that the ball may as likely have passed under the tendon of the biceps, dividing the artery in its course; and, from the elasticity of the tendon, the ball might then take a backward and upward direction, and escape where it did. The one case is just as likely to have happened as the other; for those best acquainted with gun-shot wounds know how slight a resistance will change the course of a bullet.

John Hunter used to relate the case of a person who was shot with a bullet in the forehead; and there being no counter opening, it was supposed that the ball had lodged in the brain; but, on a minute examination, they found that the skull was not fractured, and tracing a crepitus of air from the wound towards the lower portion of the parietal bone, then backwards to the occipital bone, and round to the opposite side, even to the wound in the forehead again. Thus the ball performed the circuit of the head under the integuments, and escaped where it had entered. The course, therefore, which we have assumed that the ball, in the case under consideration, had taken, is not at all problematical: hence the profuse hemorrhage, and the propriety of the loose application of the tourniquet.

I really think, Mr. Editor, that, considering all these matters, there does not appear to be any palpably bad practice in the treatment of this case.

If the surgeons whose practice has been so unsparingly impugned had not been at Waterloo, at Vimeira, Toulouse, or even at Valenciennes, it was not their fault, but their misfortune. What appears to me to have been the grand



error, was, that Capt. Moir's family did not send for Dr. Venables immediately after the unfortunate accident, or to London, for some experienced military surgeon.

In conclusion, I would ask what could have been the doctor's motive for this attack on the character of his professional brethren, who, even supposing, for argument's sake, that their practice was the worst imaginable, had at all events done their best, according to their measure of experience? If such is to be the censure awaiting any class of medical men, for not having treated a case of gun-shot wound according to army practice, then let the College of Surgeons render it imperative that every one being a member shall have been in battle, and know how to treat gun-shot wounds from practical experience on the field. Meantime, how are his Majesty's subjects to be doctored? But, seriously, I ask, does Dr. Venables think that his strictures on this unfortunate case, at a time when it can serve no ostensible good, can in any way gratify the unfortunate families of the two deceased—can benefit himself, or advance the science of surgery?

I am, Sir,

Your obedient servant,

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August 16, 1830.

## ANALYSES OF BRITISH MEDICAL JOURNALS.

### THE GLASGOW MEDICAL JOURNAL.

August 1830.

THE present No. contains several interesting papers, most of them deserving our especial notice; but we shall at present content ourselves with an analysis of the following:—

*Dr. M. S. Buchanan's Case of Secondary Hemorrhage, in which the Subclavian Artery was tied above the Clavicle.*

The subject of this operation was a man, aged 55, who was admitted into the Glasgow Royal Infirmary on the 19th of April last. "Two days previous to his admission, while superintending some boiling solution at the alum-works at Hurler, he had inadver-

tently allowed the heat to rise too high, which caused a copious escape of acrid fumes from the vat: these so overpowered him that he fell by the side of the vessel, his right hand and forearm dropping into the boiling lye. In this state he was found by his fellow workers, and taken home quite insensible. He remained under the charge of the medical attendant of the works for two days, and on the 19th of the month you all had an opportunity of seeing him. At this period the whole of the arm, from the elbow to the points of the fingers, appeared quite dead, the skin as hard and unyielding as the sole of a boot, of a dirty white colour, and very similar to an amputated arm which has been for a long period immersed in a saturated solution of alum and spirits, and thereafter well dried. The hand and one half of the forearm were completely powerless and devoid of sensation, and the pulse at the wrist was just perceptible; the parts around the elbow were of the natural temperature, and immediately above this point there were several vesications. The pulse was 86, full; the skin rather warm, and the bowels slow." It was found imperatively necessary on the fifth day after admission to amputate the arm: it was done by the double flap, but from the state of the limb no tourniquet was applied, compression of the subclavian being deemed sufficient. The stump was dressed in the usual manner; but upon removing the dressings on the *third* day, the flaps were found wide open, the surfaces brown and sloughy, and the discharge of a very offensive nature. Stimulants were had recourse to, with good effect; yet the condition of the patient was any thing but favourable. On the 1st of May, the seventh day after the amputation, a most serious hæmorrhage took place. "The bed and surrounding dressings," says Dr. Buchanan, "were deluged with blood, the stump had the same foul appearance, the countenance pale, the features sunk, and the extremities quite cold; in short, he was moribund." The members of consultation were of opinion, that as the patient had only a few minutes seemingly to live, it was quite out of the question to propose any operation. Yet the man rallied wonderfully in the course of the day, when a majority of the consulting physicians determined, that after allowing him some

further time to recruit, the subclavian artery should be tied. This important operation was performed in the evening, and we lay the details of it before our readers in Dr. B.'s own words:—

“ Having informed the patient what was going to be done, and had all properly arranged, I turned his head a little to the left side, and requested my colleague, Dr. Perry, to depress the right shoulder; I then took my seat, and having with my left hand kept the skin of the neck upon the stretch, I began my incision with a common scalpel, through the skin and cellular substance, from the acromial edge of the trapezius muscle, onwards to the clavicular portion of the sterno-cleido-mastoideus, and about two lines above the clavicle. The first thing that came in my way was the external jugular vein: this I carefully drew to a side, and then cut through the platysma myoides and superficial cervical fascia, which was here of considerable thickness. The nerves proceeding to the axillary plexus now presented themselves, and were with ease drawn aside, the cellular substance—the connecting medium between them—being separated with the point of the finger. The immense subclavian vein was now seen, completely lying upon and covering the artery; and though in the dead subject this vessel is found under, and to the side of the arterial tube, yet in the living it swells out, and causes some trouble to turn aside. This part of the operation, however, as well as the detachment of the artery from its firm connexion to the first rib, by the side of the scalenus anticus, I with great ease accomplished, with the assistance of a silver scalpel—an instrument of great use in all operations where delicacy of touch is required.

“ Having now advanced through these steps of the operation, an obstacle of some moment presented itself to the passing of the aneurismal needle from below upwards: this was the clavicular portion of the sterno-mastoid muscle, which I was under the necessity of cutting, and then with the greatest ease the common needle was passed close by the side of the scalenus anticus, which proves so infallible a guide to the arterial tube. Having now satisfied myself, as well as all my medical friends who had favoured me with their presence and assistance, that the subclavian, and it alone, was isolated above the needle,

I proceeded to tie it, and this I without difficulty accomplished by carrying my two fingers, with the ends of the ligatures at their points, down to the bottom of the wound: a single stitch was put in the centre of the wound, and its lips brought together with adhesive plaister, and simple dressing above. The operation did not occupy more than ten minutes: there was not so much as two tea-spoonfuls of blood lost, and the pain was seemingly very trifling.

“ Much has been written with respect to the difficulties of this operation, and the trouble of passing the aneurismal needle from below upwards, and many have been the ingenious inventions to facilitate this part of the operation; I must confess, however, that in my opinion these difficulties have been sadly magnified, and here, as in most similar cases, books are of very little use; nay, I think they often do harm; for, if any one has dissected the parts frequently, and noted well their relative situation, I would advise him to take his own way of management, heedless of the intricate and often confused directions of systematic book-makers.”

We are sorry to have to add that the operation, after all, did not contribute much to prolong the man's life: he died on the morning of the 5th, about 87 hours after the ligature was put on. The traumatic gangrene, it seems, had continued to spread, and its progress was accelerated by the loss of blood, both at the amputation and at the secondary hæmorrhage.

Dr. Buchanan concludes with some rational observations on the plans which he pursued in the management of the case. We extract what he says on the peculiar propriety of selecting the subclavian:—

“ It has been asked, why was the subclavian artery made choice of, instead of the brachial or axillary? I think the previous disease, the uncertainty of the arterial tube, and the œdema, put this question at rest with respect to the brachial; for if this more simple operation had been had recourse to, what would have been the result? I fear a renewal, after a few hours, of the scene of the morning of the 1st of May. As to the operation of tying the axillary before emerging from under the edge of the pectoralis major, the same arguments hold true as in the case of the brachial, with the addition of be-

ing obliged to encounter greater difficulty, and run greater risk of loss of blood, in the attempt to secure it. To cut through the pectoralis major and minor, and thus to get at the axillary under the latter, is an operation which I believe never has been done, and further, I am of opinion never ought to be had recourse to. The twining round the arterial tube by the axillary plexus of nerves while in this situation, the deep section of so much muscular substance as the two pectorals, and the consequent hæmorrhage from so many arterial branches requiring to be divided, must render this an operation seldom or never to be attempted. The only remaining situation which I might have made choice of, was that where this trunk escapes from under the clavicle, on-wards to its dipping under the pectoralis minor: here it is covered by the thick fleshy belly of the pectoralis major, is buried deep under the clavicle, and concealed by the subclavian vein. It is an operation this which has been proposed by Desault, by Pelletan, and others,—one which I have often tried on the dead subject, but would not much relish to be obliged to have recourse to on the living. Besides, at this spot and downwards, there was considerable œdema, and some obscure fluctuation, indicating, as the inspection afterwards shewed, that the traumatic gangrene had spread thus far.

“The reasons then which influenced me in making choice of the subclavian were the following:—1st, The certainty of finding a healthy part of the vessel, or one which gave the greatest chance of being so; 2d, The securing at the same time, by this procedure, any other of the large branches which are given off on the distal side of this part of the vessel, and which might afterwards give rise to hæmorrhage; 3d, The absence of œdema, pain, or fluctuation, above the clavicle; and 4th, The greater facility, in my opinion, of performing this operation, and the less risk of hæmorrhage during its execution—a point, this last, of no little moment, where so much blood had been previously lost.”

#### *Consequences of Dissection-wounds.*

An excellent paper, by Mr. Thomas Adam.—It is extraordinary how much

diversity of opinion is prevalent concerning those *consequences*, as well as their antecedent circumstances. The author, however, has proceeded in the best possible way to remove doubts and to clear up obscurities—by a comprehensive and careful induction. His first inquiry is, whether there is a difference in the form and in the severity of the consequences resulting from dissection-wounds, corresponding with the disease of which the subject died, and its state of decomposition. His conclusion is in the affirmative; and he fairly infers, “that from inoculation with the fluids of a body recently deceased, more danger is to be apprehended than from a similar exposure to the fluids of a body further gone in decomposition.” To that part of his inquiry relating to the correspondence of symptoms with the disease of which the subject died, he thinks himself enabled to come to this conclusion—“That from some bodies more danger is to be dreaded than from others, and that those which present *serous effusions* are such.” With regard to predisposing causes, it may be asked, “Are there any such conditions, that, by rendering the body more susceptible of the impression of the excitants, or by modifying the consequences of wounds in dissection, can be justly entitled to rank under the denomination of predisposing causes? And, what are these conditions?”

“On these questions, opinions very diverse have been entertained. While some attribute to a certain bad habit of body the whole *origo mali*, others affirm that the state of the constitution has no share in the production of the evil at all.

“The following are the circumstances, consisting of observations and opinions, which I have been able to collect, bearing upon the determination of the above questions.

“Sir A. Cooper has remarked, that ‘pupils get ill from dissection about the end of the season;’—a time when, from irregularities of living, anxieties of mind, late hours in study, and the injurious influence of city air—one or all incident to the medical student in London—we may reasonably suppose that the constitution should have suffered considerably.

“Dr. Colles says, ‘I have found most of the instances of inflammation and fever following wounds in dissec-



tion, amongst those pupils who have arrived at the third season of their anatomical studies;—a time, likewise, when the above, or other causes of injurious operation, may well be supposed to have deteriorated and depressed the powers of the constitution.

“Dr. Duncan has said, ‘Some cannot handle the viscera of a recent body with impunity, although their skin be perfectly entire, while others have often pricked and cut themselves without any bad consequence.’

“Mr. Abernethy has remarked, that he has been led to conclude, that the effect of these wounds ‘very much depends upon the morbid predispositions of the party affected.’

“Mr. Travers thus expresses the result of his observations:—‘I am impressed with the belief that one of two circumstances operates towards the production of a large proportion of such cases:—first, an existing cachexia, or bad habit of body; second, a severe aggravation of the injury by some mismanagement negative or positive.’

From premises of this description (all of which our limits will not allow us to insert) Mr. Adam again concludes—

“That to certain conditions of the system may be attributed the power of rendering us more susceptible of the severe consequences of dissection wounds; and that these conditions are such as are usually expressed by the rather vague appellations of ‘irritable or bad habit of body,’ ‘scrofulous diathesis,’ ‘worn-out constitution,’ ‘general debility,’ &c.—names for a condition, of which, in general, no very precise ideas are formed.”

The paper terminates with an account of a case of dissection-wound which occurred in the author's own person. It was treated on Mr. Colles's plan of the exhibition of calomel uncombined in three grain doses, given every three or four hours, until ptyalism was produced. In Mr. Adam's case the plan was attended with decided success—“the symptoms, both local and constitutional, were thrice checked in their progress at the time of the mercurial action being most sensibly felt.”

luded to by Hippocrates in the last aphorism of his third section, has been long since proved by Brisseau to be an affection of the vitreous humour—an opacity deeply seated in the eye, frequently of a bluish or greenish colour and visible through the transparent lens. Brisseau was led “to this opinion partly from what had been detected on dissecting the eyes of Bourdelot, physician to Louis XIV., who, having been the subject of a disease pronounced to be cataract, left orders that his eyes should be examined after death, in order to throw some light, if possible, on the much agitated question, whether cataract was a film occupying the posterior chamber, or an affection of the crystalline lens. The dissection was performed by Maréchal. The lens in the right eye, with which, for many years, the patient had been scarcely able to distinguish light from darkness, was found to be totally opaque; its exterior lamellæ were less solid than the interior, forming, as it were, a whitish membrane of about half a line's thickness, which included a nucleus of more solid consistence, and of a yellowish colour. Immediately behind the fossula, which contained this lens, the vitreous humour was also opaque to the depth of more than a line, and tinged of a yellow colour, although not to the same degree. The left eye, with which Bourdelot had continued to see with tolerable distinctness, had begun to be affected in a similar way; for the lens had already lost much of its natural transparency, and the vitreous humour in contact with it was slightly yellow. Brisseau drew the conclusion, from this dissection, that, in such cases, the complication of diseases would necessarily render abortive any attempt to restore sight by operation; that although the lens were couched, the opacity of the vitreous humour would still continue, and be sufficient to impede the passage of the rays of light to the retina. He considered himself also justified in claiming for this opacity of the vitreous humour the name of *glaucoma*.

“Brisseau, moreover, having demonstrated to his full satisfaction that cataract was an opacity of the lens, was naturally led to the conclusion that the vitreous humour was subject to a similar affection, from the well-ascertained fact, that the disease called glaucoma was altogether incurable by operation,

*On Glaucoma.* By Mr. W. MACKENZIE.

Glaucoma, a disease of the eye al-

which could not have been the case had it consisted, as was generally pretended, in a desiccation and change of colour of the lens. Had glaucoma resided in the lens, it would have been cured by the operation of depression; but as it was notorious that this operation did not cure glaucoma, the conclusion necessarily was that this was a disease of some other part of the eye. Brisseau fixed upon the vitreous humour as its seat, partly vindicated, no doubt, in doing so, by the above-mentioned dissection by Maréchal.

"The appearances, also, which are presented by the eye affected with glaucoma, are well calculated to impose upon the observer, and lead him to conclude that he is looking through a transparent lens at an opaque vitreous humour. The opacity always appears to be more deeply seated than the lens; more so, however, in the commencement of the disease than after it has continued for some time. Indeed, in the earliest stage, the greenish reflection, which we designate by the name of glaucoma, appears to come from the very bottom of the eye. As the disease advances, the apparent opacity, always of a greenish colour, and often sea-green, is seen as if occupying the centre of the vitreous humour, and at last appears to be immediately behind the lens."

Mr. Mackenzie has been led to suspect "that the habitual use of spirits and tobacco operates powerfully in the production of glaucoma. This disease also appears to be more apt to occur in those who have been scrofulous in childhood, or who have exerted their eyes much on minute objects. Yet, even taking these facts into consideration, it is not easy satisfactorily to explain the frequency of glaucoma in some countries, and in certain classes of society, and its rarity in others. Thus Benedict tells us that one-half of the glaucomatous patients, whom he had seen during twelve years' practice in Breslaw, were Jews, among whom he states glaucoma to be extremely common. Scarpa, on the other hand, has not thought it necessary to introduce the subject of glaucoma into his treatise on the diseases of the eye. It is also remarkable that, in one of his letters to Maunoir, he mentions, that during the long series of years in which he filled the anatomical chair at Pavia, he had never, in dissec-

tion, met with dissolution of the vitreous humour, and that, after reading Sir William Adams's work, published in 1817, he made at least forty eyes be examined, of persons who had died between sixty and eighty years of age, without finding the vitreous humour either wholly or partially dissolved in one of them. I am certain that several out of any forty persons, above sixty, in this part of the country, would be found glaucomatous, with the vitreous humour fluid, and the pigmentum nigrum gone."

We have been much pleased with the perusal of this learned and able paper, and deem it eminently worthy our readers' notice; but it cannot be abridged without spoiling it.

### *Insanity.*

The article under this head is a familiar account of the Retreat near York.

"The establishment of a separate receptacle for the insane members of the Society of Friends, appears to have been the consequence of a request made to some of their number to visit an insane female placed in an establishment in the neighbourhood of York. Circumstances connected with the case of this poor woman made a strong impression on the minds of the party, and finally led the late Wm. Tuke to consider that an establishment for insane persons connected with that society an object highly desirable, and its attainment practicable. In this he was supported by his son Henry Tuke, and the late Lindley Murray. He for some time met with considerable opposition from an opinion which was pretty general, that the number of lunatics within the limits of their society was small; but upon what grounds this opinion was founded it is not easy to say. Perhaps it arose from the belief that there is less of what is properly called fanaticism among them than among other christians, as their ministers are less in the habit of frightening their hearers with the prospect of eternal punishment than of pointing out the true source of religious improvement, viz. the principle of love, which being reciprocal, comprehends charity. As a society also they are restrained from some other of the exciting causes of lunacy. They are prohibited from entering into the

more doubtful speculations of commerce, and from having any concern with lotteries or gaming. The subject, however, was brought before the society in the beginning of 1792, and the establishment was ready for the admission of patients about the middle of 1796."

It was in this excellent institution that the *gentle* system of treatment was first applied in this country to the insane. To Mr. George Jepson and Dr. Fowler, the first superintendent and physician of the Retreat, the credit of its adoption is due. The *new method* soon attracted the attention of many persons, both at home and abroad.

"So early as 1798, Dr. Dalarine of Geneva, after having visited the Retreat, published an account of it on the continent, in which he states the miserable condition of lunatics in places ordinarily appropriated to their care, and contrasts it forcibly with the mode of treatment in that institution. Other authors speak highly of the character of the Retreat, and in the year 1810, the report of the architect appointed by the managers of a proposed asylum in Glasgow to visit the principal lunatic establishments in Britain, states that the Retreat is 'a government of humanity and consummate skill, requiring no aid from the arm of violence or the exertions of brutal force.'"

The institution was originally designed for the reception of thirty patients only, but has since been extended so as to accommodate about one hundred. Every year's experience has tended to confirm the soundness of those principles in the management of the insane, which at an early period formed the basis of the system. It may be interesting to know, that of the whole number of patients under cure, not more than eight on an average are found to require any degree of personal restraint except those of the bounds allotted them for exercise. Many of them walk out daily: the men are employed in the garden, and the women in various domestic offices.

#### *Monstrosities.*

Of these there seems to be rather an abundant harvest in the present number. Besides a well-digested paper on the subject, from the *Anatomie Philosophique*, we have two cases of foetal mal-

formations; one by Dr. Wm. Davidson, a case in which a child was born alive (and lived for 24 hours), having its brain situated outside the skull. It was a female child, plump, and otherwise well formed, born at the natural period—the labour also natural. The brain seemed like "a tumor, of a dark-red colour and fungoid appearance, about the size of an adult's heart, but of a flatter shape, hanging by a small flexible pedicle from the posterior fontanelle." This pedicle was moreover nearly an inch in length, about the thickness of the middle finger, and covered with a dense firm membrane, evidently the continuation of the dura mater within the cranium. The Editor observes in a note, that Dr. Davidson's case "may be readily referred to that genus of monstrosities, called by M. Geoffroy St. Hilaire, *padencephalous*, because the brain is supported on a pedicle, and without the cranium. The extreme hardness of the bones of the basis of the cranium agrees with the antagonism of its bony elements, the weak development of the parietals and squamous portion of temporals, &c. producing a hypertrophy of the other bones."

The other case of foetal malformation is reported by Mr. Provan. He says it "very nearly resembled an enormous frog." It certainly was a most anomalous monster, according to the description he gives us; but we cannot follow him in the detail—we must have done.

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#### LICENSE TO SELL PATENT MEDICINES.

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*To the Editor of the London Medical Gazette.*

SIR,

THE period not being far distant when the licenses for selling patent medicines must be renewed, I beg leave to address you and the medical public on this subject, for many have been equal sufferers with myself, who are under the necessity of keeping a shop; though I am aware the idea has been broached in your Gazette, that we should have but little to do with the counter. If I understand rightly, there was to have been a bill passed in the last parliament for taking off the duties from one or more articles in the list of patent medicines;



and, granting this, I ask, first, if this measure, had it passed, would have been of any service to the medical public who complain? Or, secondly, would it not have been merely to afford relief to the public in general, who have not complained?

Now, I conceive, Sir, I can prove both my positions, and thus at once strike at the root of the evil; and should my suggestion be acted upon this season, (though I doubt the power of the commissioners, without the aid of parliament) it would be a great blessing to a large portion of his Majesty's liege subjects in the medical world. First, I beg to observe that the trade in patent medicines is carried on by a few large "houses," and by some proprietors of the various receipts for nostrums, some of whom advertise and vend the medicines themselves. Now a small trader like myself is supplied from one of those large houses, of which there are not many, and they consequently transact a great deal of business in the course of a year; while the small trader has only his own neighbourhood to depend on, yet he has to pay just the same as the large trader. Is this fair—is it just? or was it not an oversight when the medicine act passed? This query, I am satisfied, you and the medical public will answer in the affirmative. Have not these very persons, who gain so much, been laughing for years, both at us and at the act? Without a doubt they have, Sir; and the only way for government to equalize the trade of selling patent medicines would be by lowering the price of the license at once from forty shillings to ten, or to put the whole trade under a per-centage, thus giving every one an equal chance, and making them pay according to the extent of their connexion; for the sale required to realize forty shillings on such articles is far greater than many medical practitioners can command, though they are compelled to keep numerous articles which render them liable to be informed against.

Secondly, so far as I can learn, I am not aware that the public in general have ever complained of the tax on patent medicines, but, on the contrary, they most cheerfully pay it; for, observe, they use them in most cases as a forlorn hope, when the regular medical attendant has been foiled—when the art and science is of none effect: then it is

that he has to pay the tax—and who thinks of it? Assuredly it is the seller, not the buyer, who does so. As to soda-water, most persons who drink this can well afford to pay the tax; therefore I do not see any policy in taking it off that article. In fact, Sir, the relief should be to the retailer, and not to the public, who do not complain.

I think I have thus proved my two positions, and I leave them to your kindness for publication, should you think, as I do, that they are worthy of a place in the *London Medical Gazette*.

I am, Sir,

Your obedient servant,

AN APOTHECARY.

August 14th, 1830.

## MEDICAL GAZETTE.

*Saturday, August 21, 1830.*

"Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."—CICERO.

### UNQUALIFIED PRACTITIONERS.

It is quite frightful to think of the extent of injury inflicted on the public by unqualified persons practising medicine. We lately made some general observations on quackery, as a "science and art" (to use Mr. St. John Long's expression), and we shall take an early opportunity of recurring to the subject, and giving some particular illustrations of his doctrines and practice. In our present number we have only space left to notice briefly another of the many instances in which Coroners' Inquests bring to light proofs of extraordinary incompetency on the part of those who, nevertheless, are ready to treat all cases which may fall in their way.

A case, supposed to be one of hydrophobia, was recently admitted into the Westminster Hospital, the patient being almost in articulo mortis, and expiring in the course of half an hour. Up to this time he had been consigned to the care of a Mr. Mills, at Lambeth, described in the *Times* as "a

most *outré* looking personage ;” and whose professional exhibition seems to have been quite as *outré* as his personal appearance.

The coroner’s inquest has been published in several of the morning journals, and from the evidence there given it appears that Mr. Mills bled the man four times, and “ did what was necessary, according to our Pharmacopœias and other books of medicine.” On being asked by one of the jurors why he bled him, after refusing to answer until compelled by the coroner, the only reason he could give was, “ because I chose.” “ What quantity did you take ?” continued the juror : “ how should I know ? I did not scrape it off the carpet,” was his impertinent reply. He went on in a scarcely intelligible jargon ; and the whole of his evidence, from beginning to end, was a tissue of impudent vulgarity and ignorance. The jury, in their verdict, declared their belief that the deceased might have been saved if proper medical attendance had been procured, and the coroner warned Mr. Mills not to attempt to treat such cases again.

Do not such examples as these call loudly for better legislation ? Here is a person, calling himself a “ surgeon-dentist,” without a diploma, and evidently without medical education, allowed to go loose in society, and to tamper with the health and lives of all within his sphere who are infatuated enough to employ him. This is not the first patient of his who has appeared at Westminster hospital. The case of artery punctured in bleeding, which cost the unfortunate man his life about four years ago, would have been a sufficient warning to any one endowed with the common feelings of humanity—to any one whose ignorance was not outstripped by his presumption and audacity. But he is only one of a tribe who, while they disgrace and degrade the medical pro-

fession, literally prey upon the health and lives of their fellow-subjects.

It is not a question here whether the treatment adopted in this case was judicious or not : it is enough to know that the individual is not properly qualified ; and therefore that it was adopted at hazard—without his being able to give the shadow of a reason for his proceedings—with a recklessness proportionate to his ignorance. It is enough to know this, to be aware that many lives must be annually sacrificed, and to feel convinced that the corporate bodies who are to watch over the interests of the community, and the qualifications of those who practice medicine, ought to be more fully empowered to pursue and punish such vampyres. But it is in vain for us to rail. If we only had half a dozen physicians and surgeons in parliament, these imperfections in medical legislation would be remedied, and the grade of the profession in the scale of society greatly raised.

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#### ANATOMICAL BILL.

WE understand that it is intended to introduce the new anatomical bill early in the ensuing session. The chief obstacles are said to be overcome, and the provisions, as regards science, are more satisfactory and complete than in the bill which was last year lost in the House of Peers after it had passed the Commons. Lord Tenterden, we hear, waves his objections, and hereafter, instead of the bodies of murderers being given up for dissection, it will be at the discretion of the judge to direct that they shall be hung in chains or restored to the relations. One of the motives which induced the friends of the measure to decline bringing it forward last season was the immediate prospect of members having to meet their constituents, which circumstance it was feared might influence their votes on an occasion in which it is generally supposed that popular prejudices are deeply involved. The subject of the anatomical bill was alluded to at the public dinner which was recently given at Bridport,

when the honourable mover (Mr. Warburton) met his constituents. So far, however, from any dissatisfaction being expressed on the occasion, unequivocal marks of approbation were displayed by those present, and Mr. Warburton was justly regarded as having exerted himself in removing one of the greatest opprobria of English legislation,—compelling men to break the law in order to become legally qualified to practice their profession; and to violate the strongest feelings of our nature—to secure the dearest interests of humanity.

#### PROPOSED MEDICO-POLITICAL MEETING.

A most wise proposal has been made by Mr. King, and seconded by Wakley, that the medical students in London should have a public meeting, to hold a sentimental correspondence—a mutual expression of surgico-military propensities—an interchange of physico-political sympathies—with their *confrères* in Paris! The meeting is to be held—or, rather, the parties alluded to propose to hold it—in the largest class-room of the London University!—and all this is put forth with as much gravity as if the parties had been in earnest. The idea is so intrinsically ridiculous that, remembering the forgery of a letter from Dr. Ramsbotham, which we exposed last week, we should have looked upon the letter of Mr. King as a mere fabrication, notwithstanding the name and address of the writer being given, had we not been aware that he is an *employé* of the *Lancet*.

Doubtless it would be very desirable to bolster up the drooping popularity of a certain publication, particularly as all the reform meetings are still adjourned *sine die*. “Wait till next autumn,” has, indeed, been so long the cry, that people begin to doubt whether it will ever come. The plan of this meeting, as a substitute, is excellent; in fact we see but one objection, and that is—that it never will take place. The Council of the London University are not such fools as to lend their building for such a purpose; and the students of medicine have already repeatedly shewn that they are too much gentlemen to have any thing to do with Wakley.


## HOSPITAL REPORTS.

### GUY'S HOSPITAL.

#### Lithotomy.

TUESDAY, July 27th, Mr. Cooper performed this operation on a boy between five and six years of age. The child was bound in the usual manner, and the staff introduced into the bladder and held in its proper position by Mr. Key. The operator then commenced his first incision at the symphysis pubis, and extended it downwards and outwards on the left side of the raphe of the perinæum to about midway between the anus and tuberosity of the ischium, thus dividing the integuments and infra-jacent cellular membrane and fat. The next step consisted in dividing the perinæal muscles usually cut through in this operation: this being done, the index finger of the left hand was passed into the wound to feel for the staff; the knife was next introduced and fixed in the groove; the handle of the staff was then taken from the assistant and gradually depressed, whilst at the same time the knife was carried forwards into the bladder; a slight flow of urine followed the section of the prostate, but no evident gush. The staff was next withdrawn, and the finger again introduced into the wound, along which was passed a pair of forceps, and the stone laid hold of, but on account of its brittleness it broke, and a portion only was at the first time extracted: the remaining fragments were afterwards removed with a more appropriate pair of forceps, and likewise by means of a scoop. The bladder was then injected twice, and a good deal of fœtid gravelly matter afterwards escaped with the water. The time occupied in the cutting process and extraction did not exceed ten minutes. The stone was of an oblong shape, (as was seen, the greatest part having been removed entire,) having a peculiar fœtid smell, about an inch and a half in length, thick at both ends, and narrow in the middle; in fact, it appeared almost like two calculi joined together by a narrow neck. One extremity was somewhat larger than the other, which was evident on joining the broken portions together; the smallest, which was the part where a portion was broken off, appeared to be composed of triple phosphate alone, whilst the other consisted of uric acid, with a thin layer of the triple phosphate collected on the surface.

The patient up to this time (August 14th) has done and is now doing remarkably well: the wound is nearly healed.

 For other articles, see Supplement.



# THE LONDON MEDICAL GAZETTE,

BEING A

WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

SATURDAY, AUGUST 21, 1830.

## LECTURES ON SURGERY,

*Delivered at St. Bartholomew's Hospital,*

By WILLIAM LAWRENCE, F.R.S.

### LECTURE LXXII.

DISEASES OF THE EYE *continued*.—*Cataract*  
— *Extraction* — *Couching* — *Operation for*  
*Solution*.

CATARACT, gentlemen, is a partial or general opacity of the crystalline lens, or of its capsule, or of the Morgagnian fluid which intervenes between them, or of all these taken together. The existence of the disease, therefore, is denoted by the presence of an opaque substance behind the pupil, and by an impediment to vision corresponding to the degree and to the extent of the opacity. In the circumstances of the opacity behind the pupil, and the impediment to vision, cataract agrees in some respects with other affections of the eye—*glaucoma*, for instance, which consists in a change of structure in the vitreous humour; also some cases of *amaurosis*, which are attended with a change in the appearance of the pupil; it is necessary, therefore, to distinguish that kind of opacity which constitutes cataract, from that which may be produced by other diseases of the eye.

The opacity in cataract is situated immediately behind the pupil, or at all events at a very short interval from it. The opaque appearance in the pupil which takes place in *glaucoma*, or in particular cases of *amaurosis*, is deep-seated; it is at the bottom of the globe of the eye. You see the opacity in those cases when you look directly into the pupil, but if you look sideways you are no longer aware of its existence; while, in cataract, you still see the opacity whether you look sideways or direct. Indeed, in *glaucoma* or *amaurosis*, the opacity is situated beyond the crystalline lens, therefore it must be a considerable distance behind the pupil. The

colour of the opacity in cataract is greyish, whitish, or of a light-yellowish brown, like that of amber; in *glaucoma*, the opaque appearance of the pupil is green—a dull dirty green—a yellowish green—sometimes even a brightish yellow green; and in the case of *amaurosis*, it is either of a dull-lead or something of a dark-livid hue, or greenish colour. The tint of colour, however, is not in itself a sufficient distinction between cataract and other affections; it is only a circumstance which will assist you in forming your diagnosis, in conjunction with some other points. The impediment to vision produced in cataract is in a direct ratio to the degree of opacity that is observed—that is, in the commencement of the affection the impediment to vision is inconsiderable, but it becomes more considerable as the disease advances. Vision, however, never becomes entirely extinct in cataract, however complete, or however dense, the opacity may be. If you suppose the lens to be densely opaque throughout, the capsule to be also opaque, and if you suppose, in addition to that, that the pupillary aperture should be closed, still a sufficient quantity of light would pass into the eye to render the patient quite sensible of the difference between light and darkness. The power, therefore, at all events, of distinguishing between light and darkness will be found to exist in cataract, and the presence, at least, of that power is necessary in order to prove that the retina is sensible. If the patient with cataract is unable to distinguish between light and darkness, we then conclude that with cataract there is combined *amaurosis*, or insensibility of the optic nerve, and consequently that the performance of an operation would be of no use. In the earlier periods of cataract, persons are able sometimes to read, to discern the figure and colour of objects, and even, sometimes, if the opacity be not very great, though it seems to occupy the whole of the pupil, the power of distinguishing large objects and colours still remains.

Cataract is very often developed at first in the centre of the pupil, and then gradually extends to the circumference, so that you may have the central part of the pupil opaque, while the circumference remains transparent. Under such circumstances the patient would be able to see well in a weak light when the pupil is dilated; while in a strong light—that is, when the pupil is contracted—he can hardly distinguish objects at all. I have seen a patient, while the face was turned towards the window, scarcely able to distinguish objects, while, when his back was turned to the window, he was able to read large print. Even when a cataract is complete, and the whole of the pupil is occupied by opacity, that opacity is most dense in the centre, and less so in the circumference, because the crystalline lens is thickest at its centre, and thinnest towards its margin; hence a patient with cataract can always see better when in a weak than in a strong light, because, in the latter case, the pupil is contracted, while in the former it is dilated. For the same reason, cataract patients see better at dusk than in the strong light of day. They also have vision considerably improved by dilatation of the pupil, by the use of belladonna, because this uncovers the apparently transparent circumference of the crystalline lens. In glaucoma and amaurosis the degree of impediment to vision bears no direct relation to the appearance of the pupil—that is, when the opacity which you observe deep in the bottom of the eye is inconsiderable, you very commonly find vision very seriously impaired; you find the degree of injury to the sight much more considerable than could be produced simply by the opacity in the pupillary aperture, so that you conclude very safely that the state of vision depends rather on some alteration in the condition of the nerve, than in the impediment which the opaque substance offers to the transmission of light. A patient with cataract finds his sight impaired in this way; it appears as if a cloud, or a mist, were interposed between him and the object he looks at; and this cloud, or mist, gradually increases in thickness, until the objects are completely concealed. In the case of amaurosis, very often vision is altered quite in another way. Now a cataract patient, for example, will see the flame of a lighted candle as if there was a cloud or mist about it, while a patient with amaurosis will probably see it confused, and spreading out into rays—altered in that kind of way.

Taking cataract as a genus of disease, we find that it may be divided into a great number of species, for cataracts differ very much from each other in different instances; and, in fact, these differences are

of importance, for they often lead to important differences in the mode of treating the complaint. We distinguish cataract, in the first instance, according to the part in which it is situated; hence the distinctions of *lenticular*, *capsular*, and *capsulo-lenticular* cataract (in which both the capsule and the lens are involved in the disease), and the *Morgagnian* cataract, in which the opacity resides in the Morgagnian fluid. Now, respecting the latter, it must be considered doubtful whether such a cataract exists or not; and, indeed, we can hardly suppose the morgagnian fluid to be materially altered without a corresponding change taking place in the lens—therefore I am almost inclined to leave it out of the enumeration of cataracts altogether; at all events we may leave it out for all practical purposes.

Lenticular cataract may vary considerably in degree and consistency; and these differences are attended with different appearances of the opacity. In the first place there is hard or firm cataract—a state of the lens in which it has not only lost its transparency but acquired a firmer consistence than it naturally has. This is the ordinary cataract of elderly persons. The colour of this cataract is that kind of light-yellow brown which is called amber-colour, and the tint and colour are deeper in proportion as the consistence of the cataract is more firm. Sometimes you may have it even of a still deeper colour, like mahogany, and then the cataract is very hard; generally speaking, however, it has more of the lighter cast which distinguishes amber. The opacity in this case commences in the nucleus of the lens, and gradually extends to the circumference; therefore, in the beginning, although you can see that the lens is opaque, the patient can usually see tolerably well when the light to which the eye is exposed is not very strong; and sometimes, as the lens is generally rather diminished in size when thus hardened, the lenticular cataract appears to be situated at some little distance behind the pupil; more particularly if the capsule be transparent there is a recognisable distance between the margins of the pupil and the opaque body, and the iris moves freely. Indeed I should have mentioned that in cataract generally, if it be unattended with any other affection—that is, if the cataract is simple opacity of the lens and its capsule—the iris moves as freely as it does in the healthy condition of the eye. I have already mentioned that a sufficient quantity of light passes through the lens to make an impression on the retina, so as to enable the patient to mark the difference between light and darkness; and as much light will pass through it as will be necessary to cause a contraction or dilatation of the pupil, and in the case of firm len-

ticular cataract, you will see that the iris will move quite as briskly as in the natural condition of the organ.

Lenticular cataract may be soft—that is, the consistence of the lens may be about natural, or it may be softer; it may be of the consistence of cheese, or jelly—caseous or gelatinous cataract; or it may be even so altered in its consistence as to be reduced to a thin fluid like milk—fluid or milky cataract. These soft cataracts are of white colour, like milk, or rather like milk when diluted; and in this state the opaque substance appears to the eye to have a kind of gelatinous or jelly-like consistence. Soft cataracts are larger in bulk than hard cataracts; indeed, as in the hard cataract the bulk of the lens is lessened, so in soft cataract it is rather augmented; you will find such cataracts come very near to the pupil, and occasionally even project into the pupillary aperture. In such cataracts, as the quantity of opaque substance is larger, the impediment to vision is more considerable, so that persons are not so well able to distinguish objects, colours, and so forth, when affected with soft, as when affected with firm lenticular cataract.

In capsular cataract you can distinguish clearly by the eye the difference in the texture of the opaque substance; it is a dense smooth membrane that is rendered opaque; something very different from the soft fluid or jelly-like substance of the lens; so that when you look at it, you find that it is quite of a smooth and glistening appearance, something like the streaks which you see in the fracture of spermaceti, for instance. In this case also the opaque body is situated close to the edge of the pupil. It is so far forwards that you see it when you look at the eye quite in profile, and it sometimes, as I have already stated, actually bulges into the aperture of the pupil. Now we are not much in the habit of seeing opacity of the capsule without opacity also of the lens; and we may say, that if from any cause the capsule becomes opaque, the lens also will sooner or later become so. It is not very uncommon to see the capsule first becoming opaque, and after a short time the lens becoming opaque also. We have not in any case, practically speaking, to deal with the capsule alone, the lens being transparent. Whenever the former comes into a situation to require an operation, the lens is also opaque; and a great many cases are of this kind. Very commonly also, when you have lenticular cataract, there is conjoined with it an opaque state of the capsule, constituting capsulo-lenticular cataract.

A soft capsulo-lenticular cataract is generally of a very considerable bulk, for the capsule not only loses its transparency but it appears to thicken and swell; so that these cataracts are voluminous, pressing forward the iris sometimes so as to push it almost

into contact with the cornea. Under such circumstances the cataract mechanically interferes with the motions of the iris, which are in consequence rendered sluggish. You may find that the pupil hardly moves on varying the quantity of light which the eye is exposed to, and if you were not to look attentively to the points I have just mentioned, you might suppose this sluggishness of the iris proceeded from the insensible state of the retina.

Cataract sometimes occupies only a part of the pupil, and not the whole. There are some uncommon cases, in which the central portion of the lens is opaque, and the circumference is quite transparent. This occurs in one form of congenital cataract, and sometimes in capsular opacity. In these cases the opacity is generally irregular—the whole of the pupil is not equally opaque—there are spots and streaks of opacity, with more transparent portions intervening.

I have observed that we do not often find capsular cataract without opacity of the lens. Now capsular cataract sometimes exists after a lenticular cataract has been removed. An opaque lens may be removed or taken away by absorption, and a capsular cataract may be left. In such a case the opaque body is merely a thin layer of the capsule—of course it cannot at all press against the iris; it is small in size, and the anterior chamber is usually very large.

Cataract may occur at all ages; sometimes it exists at the time of birth, and then it is called *congenital* cataract; or it may take place at any period; it is most frequently, however, observed to take place after the middle period of life.

Cataract varies in its consistence, as I have already mentioned. You never find a hard cataract in young subjects. The lens, in cases of congenital cataract, or in cataracts that occur in persons before the period of puberty, is usually soft; at all events, its consistence does not exceed the natural consistence of the organ: hard cataracts are found in elderly subjects; soft ones, however, sometimes occur in them, though you never have the opaque lens hard in the young subject. Cataracts differ by being either simple or complicated; in the former case the affection consists merely in the alteration I have mentioned in the lens or its capsule; in the latter there are, at the same time, other affections of the eye. When the cataract is simple, you then find that the retina possesses its natural sensibility; you find that the iris performs its regular motions, and that the pupil consequently exhibits those changes which the variations in the quantity of light ordinarily produce. If cataract is complicated with amaurosis, then you will find, probably, that the patient has no perception whatever of light, that the iris is motionless, and that



the pupil remains permanently in one state. Cataract may be complicated with glaucoma, and the history of the case will generally throw light both upon this complication and that of amaurosis; the circumstances under which the disease has arisen, will point out to you pretty clearly, if you examine them accurately, whether the case be one of simple cataract, or presents either of these complications. Glaucoma, the disease I have already described, consisting in either acute or chronic inflammation of the vitreous humour, produces in the end opacity of the lens. At first, the change which is seen in the pupil depends merely on the alteration in the condition of the vitreous humour; but after a certain time the lens participates in the change, and becomes converted into a dirty white, or greenish cataract; and such are called glaucomatous cataracts, the hue differing materially from that which we distinguish in the simple cataract I have already described. These glaucomatous changes of the lens are also attended with other changes in the appearances of the eye, which materially assist in distinguishing the nature of the complaint. In those cases the lens is very commonly pushed forwards into the pupillary aperture, sometimes quite jammed against it, and sometimes protruded against the surface of the cornea. The iris is altered, having a dull leaden tint; the pupil is dilated, the cornea is dull and hazy, something like a dead person's, and the external vessels are very commonly knotted and enlarged like varicose veins. Such a combination of circumstances points out that the cataract is merely one of an extensive series of changes affecting the organ of vision.

Cataract may be produced by a wound of the crystalline lens, or of the capsule. Whenever either of these parts is wounded, however slight or inconsiderable the wound may be, opacity of the lens is the consequence. If you merely puncture the capsule with a fine needle, it will become opaque. Wounds which penetrate the lens or the capsule generally are attended with a good deal of inflammation, so that usually the capsule becomes opaque as well as the lens, and, under this change, the latter usually undergoes absorption. The effect of such wounds is, first, to render the lens opaque, and then to lead to its absorption, so that in process of time, and without any operation, you will have the lens, which has been rendered opaque by a puncture, removed by absorption—the opaque capsule being commonly left behind. The lens and capsule may be rendered opaque by inflammation; and internal inflammation of the eye, if not arrested, will generally produce this effect. Such cataracts are usually attended with attachment of the margin of the pupil to the capsule of the lens. Occasionally cataracts form under circum-

stances in which there are symptoms of congestion and of determination of blood to the eye and head generally—uneasy sensations about those parts; and this is particularly the case with the capsulo-lenticular cataracts of the soft kind. In a great number of instances, however, cataract takes place under circumstances which do not enable us to discern its immediate cause, so that we can by no means say that opacity of the lens and capsule is generally a consequence of inflammation. The analogy, indeed, between the changes that occur in the transparent parts of the eye, and those that take place in consequence of inflammation in the other parts of the body, might lead us, *à priori*, to suppose that this would be the cause; but, in the instance of cataracts which occur in elderly persons, we see them taking place in individuals in the most perfect health, and without any other change whatever of the appearance of the eye, or any visible derangement in the vascular state of the organ, the alteration being simply a loss of transparency in the lens and capsule, and we really cannot, in those cases, say what the immediate cause of the change is, or point out clearly the nature of the affection.

The opacity of the lens or capsule does not admit of being altered in any degree, much less of being removed by any kind of external application to the eye, or by any species of internal treatment. All local applications and internal remedies are inefficacious in the treatment of cataract, except, indeed, so far as may relate to some particular symptoms connected with it; but we do not know of any application, or of any kind of treatment, that is capable of diminishing the opacity of the lens or capsule, much less of removing it entirely. We necessarily come then to the performance of a surgical operation, for the purpose of getting rid of the opaque substance which is situated in the axis of vision. For a long period the operation performed for this purpose consisted in pushing the lens downwards, so as to place it below the inferior border of the pupil in the vitreous humour. An instrument was carried into the eye at its outer side, placed on the upper part of the lens, which was then pushed downwards, so as to place it below the pupil in the vitreous humour, and this operation was termed *depressing* or *couching the cataract*. This was the operation performed from a very early period of the surgical art, until about the middle of the last century, when another operation was introduced, which consisted in making a division of the cornea sufficiently large for the lens to pass out through it—in dividing the capsule of the lens, so as to allow the lens to escape, and then squeezing it out through the pupil, and letting it escape at the wound in the cornea. In this mode of performing the operation, the lens

is actually taken away from the interior of the globe of the eye, and this is termed the operation of *extraction*.

A third mode of operating consists in wounding the lens and the capsule, leaving the lens in its situation in the eye to be removed by the process of absorption, which I have already mentioned invariably takes place after a penetrating wound of this kind: this has been called the operation by *solution* or *absorption*, where the lens is not pushed out of its situation, but where its substance is wounded, so that it is afterwards removed by the absorbents from the interior of the eye.

This last operation has been performed in two modes, either by introducing the instrument by which the breaking up of the lens is effected, in the same way and at the same point as it is introduced in the operation of depression—behind the iris, or by carrying it into the eye through the cornea and pupil—that is, in front: the latter has been called the *anterior* operation, the former the *posterior* operation. These are the various modes of operating employed for the cure of cataract.

Before you proceed to the performance of any kind of operation, it is necessary that you should carefully prepare the patient for it; that you should take care that he be in a good state of health at the time of performing it, and in a state in which there may be no risk of inflammation from the operation. The principal cause of failure in the operation for cataract is the occurrence of inflammation in consequence of the operation, which is to be regarded as a serious one, for it produces a penetrating wound of the globe of the eye, extending into the interior of the organ; and when inflammation comes on as the result of that operation, it is an inflammation involving the internal parts of the eye; and if it be considerable, the consequences are likely to be serious. You must take care, therefore, to have the patient in such a state that inflammation will not be likely to ensue from the operation. In a doubtful case, that is, where you are uncertain whether the retina may possess its due sensibility, or where, from the age or state of health of the patient, you entertain doubts whether the operation will be attended with a successful result, you must proceed very cautiously, and perhaps be contented rather with employing palliative measures, than run the risk of losing, by the operation, that small degree of sight which the patient may possess. The dilatation of the pupil, by the employment of belladonna, often improves vision considerably under these circumstances; and if a person possesses but an imperfect degree of sight, it will be better that he should be contented with the palliative relief which this remedy affords, than run the risk of having

vision entirely destroyed. It is true he may not see much; but if he sees at all, he will hardly be willing to lose even that little by the operation.

[Mr. Lawrence then proceeded to shew the operations.]

In the first place I will show you the operation by extraction. A great variety of instruments have been employed for the performance of this, and of the other operations upon the eye. The truth is, that in the performance of the operation of extraction particularly there are considerable difficulties, especially in certain parts of the operation—difficulties that can only be surmounted by considerable practice, so that this is not an operation that is performed by surgeons in general; it does not often happen to practitioners to have a sufficient number of operations of this sort to perform, to enable them to acquire the necessary dexterity for performing it well. It is not necessary for me to enter into a description of the various knives that are used in performing the operation, it is sufficient for me to mention what I think the best, and that is a knife of the triangular shape, which I now show you, and which is commonly known as *Beer's* knife. It is sharp-pointed, the basis of the triangle being towards the handle, and the two edges converging to the apex or point.

The object you have in view in the extraction of cataract is to make an opening in the cornea large enough to allow the lens to pass out, and for this purpose you find it necessary to divide about one-half of the cornea. This circular line [referring to a diagram] represents the cornea, and the line drawn within it, at the lower part, represents the extent of the cornea to be divided. You divide half of the cornea, carrying the incision near to its circumference—that is, near to the point where it joins the sclerotica. I have here made the representation as if the section were to be made at the inferior half of the cornea; but it may also be made in the superior half. There is this advantage in dividing the superior half, that it enables you to operate on the patient's right eye with the right hand; for if you divide the lower half, then you must use the left hand in operating on the right eye. You might divide the lateral half of the cornea, if it were convenient—for the only object, whether the division be of the inferior or superior, or lateral half, is, that the opening may be sufficiently large to allow the easy escape of the lens from the eye. You must have the patient seated before you; place yourself on a seat opposite him, of such a height as to give you the free use of both hands; the upper eyelid must then be raised by an assistant, standing behind the patient, while you depress the lower eyelid with the fingers of the left hand, holding the

knife in the right. At the same time that you depress the lower eyelid with the fingers of the left hand, you can sufficiently steady the globe of the eye to prevent it from rolling when touched with the knife, and this is an important point. If you were to leave the globe at liberty, when you touched it with the knife, it would immediately turn inwards; you must therefore fix it, and you can fix it quite steadily—giving the patient very little pain—by just applying the ends of the two fingers against the surface of the conjunctiva, which gives you the complete power of fixing the globe. The operation, we may say, consists of four parts. The *first* is the operation of cutting the cornea. You must carry the point of the instrument through the cornea, beginning on the temporal side of the eye, and make the puncture by which the knife enters into the anterior chamber. In doing this you must carry the point of the instrument perpendicular to the surface of the cornea; for if you make it obliquely, it may pass into the laminae of the cornea without penetrating the anterior chamber. When you have punctured the cornea, then the *second* part of the operation consists in carrying the instrument steadily across the anterior chamber, with the flat surface of the knife parallel to the iris, until it arrives at the nasal side of the eye. The point of the knife passes through the cornea on the nasal side, just opposite the part where the knife has entered by the temporal side. This is the *third* stage of the operation. When the knife is thus passed across the anterior chamber in front of the iris, by carrying it straight out its breadth is so much increased that it divides the cornea sufficiently, or if not, as soon as you find that you have carried it out, you may gently move the knife backwards and forwards at the same time that you carry it downwards, and thus you divide the inferior half of the cornea. You must not do this very rapidly, for you will recollect that the muscles are in a state of spasm, and may force out the lens, and perhaps the vitreous humour at the same time, if you make the division very rapidly or forcibly. When you have made this incision, and let out the aqueous humour, (for the aqueous humour flows out of course when the cornea is thus freely divided,) then you must make an opening in the capsule of the lens, in order to let the lens out, and this is done by a small instrument, called a *curette*, sometimes made of gold, with a cutting edge, and which you introduce carefully under the flap of the cornea, and carry through the pupillary opening, and by pressing it and moving it gently backwards and forwards it divides the capsule of the lens. Introduce the *curette* with the convexity towards the edge of the cornea, so that it may not hitch in the cornea or iris. Now that the cornea has

been divided, and the capsule opened, the lens will escape with the greatest ease.

When you compare the size of the lens with the size of the pupil, you would suppose that the lens would not easily pass through the pupillary aperture; however, the iris is very extensible, and gives way to the passage of the lens; it seems as if it would be torn by it, but it is not; it allows the lens to come out, and then contracts. After this part of the operation you allow the patient to rest a little, and then take the opposite end of the *curette*, which resembles a small silver spoon, and press the upper eyelid with it, while you have your fingers on the lower part. The lens now passes out, and the flap of the cornea will fall down, and subsequently unite by adhesion, just as a simple incised wound will unite in any other part of the body. After the lens has escaped in this way, and the flap of the cornea falls down into its proper situation, nothing is wanting in the nature of adjustment, for if the operation is well performed the eye becomes adjusted of itself, the pupil contracts, the flap of the cornea is laid over it, and the patient is directed gently to close the eyelids as if asleep; after this, place a thin soft rag, dipped in water, over the eye, confining it loosely by a single turn of bandage fastened to the night-cap; then let the patient go to bed, keep himself perfectly quiet, take only spare diet, and adopt all means to prevent inflammation. Under favourable circumstances the cornea becomes adherent in from 24 to 48 hours, and in the course of three or four days, perhaps, the patient may leave his bed. It is not necessary that he should keep in bed longer, and in a few days more he is able to open the eye, which hardly shews any trace of the operation, except the absence of the opaque substance. In the case of a young or robust subject, it is expedient to take blood from the arm, either in the morning, before you perform the operation, or after it, in the evening of the same day. There may be some cases in which this may not be required; but we should consider what is necessary to be done in the case of a wound of the eye, as a measure of precaution; and I think it right to do the same in this case as I should do in the case of an accidental wound of the eye, unless there should be some particular circumstance rendering it unadvisable, and therefore I am in the habit of taking blood from the arm, either in the morning before the operation, or in the evening after it, and this becomes more particularly necessary if pain, uneasiness, or any symptoms indicating the occurrence of inflammation, should present themselves; and you must watch the patient very closely for the first two or three days, in order to anticipate the occurrence of inflammation by the active antiphlogistic treatment.



The operation of couching, or depression, is exceedingly simple, consisting chiefly in carrying a needle behind the iris, introducing it about two lines behind the edge of the cornea, and pressing it forwards into the pupillary aperture, so that you can see it there.—[The lecturer illustrated this by reference to a diagram.] You then push the lens downwards to about the middle of the globe. You must of course carefully compare the length of your instrument with the size of the globe of the eye; you must also consider that you have not much space to push the lens down into, and that all you have to do is (using the instrument as the lever, the fulcrum being the point at which it has gone through the coats of the eye), to push its point downwards and a little backwards, until the upper edge of the opaque lens is below the lower edge of the pupil: if you push it deeply down you may press it against the retina, and probably produce amaurosis. After thus pushing it down, you gently elevate the needle, in order to see whether the lens remain there; for sometimes when you take off the pressure, it rises again: you push it down, I repeat, hold it a little in that situation, and when you see that it is sufficiently impacted in the vitreous humour, you draw the needle out of the eye. The idea which was formerly entertained of the physiology of the absorbents was not a very clear one, so that it was supposed that the lens remained in this way in the vitreous humour, and was liable to rise again; that any particular motion of the head, for instance, might throw it from its new position into its old one: it is now, however, ascertained, that it is entirely taken up by the absorbents, so that eventually depression, like extraction, removes the lens from the eye altogether.

In the operation by solution, or absorption, you introduce the needle as you would do in the operation of depression; in the case of a soft lens, you move the needle a little about in the substance of the lens, and freely lacerate the anterior portion of the capsule, by which means the aqueous humour has access to the substance of the cataract, and under these circumstances it is found that the lens is slowly removed by absorption. This operation very frequently requires repetition; the process of absorption does not go on so fast as we wish; there may be some opaque portion left behind, and it is a particular advantage of operating with the needle in this way, that you can repeat the operation over and over again without doing much mischief to the eye. In the operation of extraction the mischief is more considerable, and if inflammation comes on, the sight may be lost, and you have not an opportunity of finishing what might otherwise be done afterwards: but the operation I have now described is very simple, and though it may

be necessary to repeat it even three or four times, you at last remove the cataract without injury. You must, however, be cautious to avoid doing too much at once, and must be particularly careful not to dislocate the lens—that is, to displace it from its natural connexions; for if you put it into a situation to press against the iris, inflammation of a serious kind will be the result. I consider the best mode of performing the operation by solution to be, by introducing the needle behind the iris; when you introduce the needle through the cornea, the escape of aqueous humour presses the needle against the iris, and interferes a good deal with the performance of the operation: it is by no means so eligible as the other mode of performing it.

The three operations I have now mentioned—that is, extraction, depression, and solution—are each of them applicable to certain cases of cataract; we cannot, therefore, say that cataract should be always treated by one or other of those operations, and it is a foolish question to ask, whether extraction is preferable to depression, or whether depression is preferable to solution; each of them is preferable in certain particular instances, and we must endeavour to ascertain the nature of the cataract before operating, in order that we may determine which of these proceedings may be most advantageously employed. The operation of extraction is best suited to cases of hard cataract, because these are absorbed with the greatest difficulty; you remove the cataract in these cases, by extraction, entirely from the eye, and therefore all the long process of absorption is got rid of. In the hard cataracts, therefore, of old persons, which form the largest number of cases, I consider the operation by extraction the best; but I should observe to you that this operation can only be done by persons who possess a certain degree of manual dexterity, which can only be acquired, in the first place, by repeatedly operating on the eye of the dead subject, and then on that of the living; it is really not an operation the ability to perform which can be acquired without having had the means of doing it a good many times. The operation of depression is suited to those cases of hard cataract in which extraction is not deemed advisable, and where the eye is deep-seated—where the eyebrow is considerably over-hanging—where the aperture of the eyelids is small—where you cannot get a free exposure of the pupillary aperture, or where you cannot sufficiently trust your own dexterity. The operation by solution is particularly applicable to cases of soft cataract: thus it is applicable to cases of cataract in young subjects, which are always soft; and here I may mention to you, that in cases of congenital cataract, that is, those cataracts which exist at the time of birth, or those which are ob-

served within a short period after birth (for we are not sure that in all those cases which are called congenital the cataract strictly exists at the time of birth), in all those cases it is best to operate early. You may safely operate a month, six weeks, or two months after birth, and as the cataract is always soft, you use the needle, introducing it behind the iris, freely dividing and breaking up the opaque body and lacerating the capsule. At this time of life inflammation is not easily excited, and unless the operation is injudiciously performed, no inflammation results from it. Inasmuch as the aperture is small, it is difficult to get a free exposure of the eye, and you therefore find it necessary, particularly in infants—but sometimes also in adults—to employ an instrument to elevate the upper eyelid; this is made of silver, and is called Pellier's elevator: you introduce it under the upper eyelid, fixing it against the upper part of the orbit. This instrument may be held by an assistant, or by the fingers of one hand while operating with the other: in other respects the operation in the infant is the same as that in the adult.

When the opaque lens is got rid of, whether by the one or the other operation, patients who recover vision find it necessary to use spectacles. The lens is an important part of the apparatus for refracting the rays of light, and when it is lost you must supply the deficiency by optical means; and there are strongly convex glasses, called cataract glasses, which are necessary for patients who have undergone the operation. Although, therefore, vision is often recovered to a considerable extent by this operation, the aid that is to be afforded by those glasses is still required; and as the eye, after the operation, does not possess the same accommodating power that it had before, the patient finds it necessary to have glasses of two kinds—one pair more convex, for near objects, to use for instance in reading or writing—and one pair less convex, which he uses for looking at distant objects.

### LECTURE LXXIII.

DISEASES AND WOUNDS OF THE EYE AND ITS APPENDAGES concluded.—*Adhesions of the Iris.*—*Artificial Pupil.*—*Presence of Foreign Bodies in the Eye.*—*Penetrating Wounds of the Globe.*—*Diseases of the Lachrymal Gland and Duct.*—*Extirpation of the Eye.*

VISION may be impaired, or lost, in consequence of changes in the eye, which obstruct, or entirely prevent, the transmission of light through the pupil. These changes may sometimes be remedied by an operation which has for its object either the formation

of an entirely new pupil, through which the rays of light can pass into the interior of the eye, or the enlargement of the original opening when in a contracted state. Either of these operations is called the operation for making an artificial pupil. The pupil may be closed, or it may be greatly contracted, or its aperture may be obstructed by an adventitious membrane formed by the organization of lymph, effused in consequence of inflammation attacking the eye. These changes may be produced by inflammation following the operation of extraction of the lens, or, indeed, by any of the operations that are performed for the removal of cataract; or they may be produced in consequence of iritis, whether idiopathic, syphilitic, or arthritic. Again: the pupil may be contracted, altered in its figure, changed in its position, or drawn out of its natural place, in consequence of prolapsus of the iris, either by a wound of the cornea or by an aperture made in consequence of ulceration of the cornea. If a wound or ulcer be situated near the centre of the cornea, you may have a portion of the iris so protruded that the pupil may be completely closed; or, if the ulcer be situated near the circumference, it may draw it down; and if the prolapsus contain a part of the pupil, it will cause considerable diminution in its size, as well as change in its form.

Adhesion of the iris to the cornea, which is technically called *synechia*, is generally attended with an alteration in the size, position, and figure of the pupil; and in this case, when the iris has become adherent to the cornea, in consequence of inflammation, or the pupil has been drawn out of its place by prolapsus, it very generally happens that the cornea is attacked with opacity at the same time, and that the opaque part, more or less, covers the pupil. The same cause which produces adhesion of the cornea to the iris, or protrusion, also causes opacity of the cornea itself, which opacity is generally situated just at the part where those changes take place, so that, although there may be a sufficient opening, that opening is rendered nearly useless in consequence of the opacity. Such, then, are the changes in the eye which prevent the passage of light, and require the formation of an artificial pupil. This operation can be undertaken with a reasonable prospect of success only when the changes in the condition of the pupil are the sole alterations which the eye has undergone, the rest of the organ being in a sound state, and more particularly when the retina retains its natural sensibility. Unless the retina be capable of receiving impressions from the rays of light, it would answer no purpose to make a new opening in the iris for the purpose of forming an artificial pupil; you must, therefore, first ex-

amine carefully whether the retina is perfectly sensible. Although the aperture of the pupil should be closed with a dense adventitious membrane, still a sufficient quantity of light will pass through it to make an impression on the retina, and to enable the individual to perceive the difference between light and darkness. In individuals, therefore, that have no clear perception between light and darkness, the operation for artificial pupil would be inadmissible. It is also necessary that the iris should retain its natural structure. The structure of the iris becomes altered by inflammation; lymph is deposited in its interstices; it loses its natural colour; the usual delicacy of its fibres becomes lost, and its substance is thickened. These changes are, in a great measure, remediable by proper treatment, when you have succeeded in putting a stop to the inflammatory affection; but, in some cases, they proceed so far that you cannot arrest them, although the iritis is removed, and the iris continues so far changed in structure that you would be unable to perform the operation for an artificial pupil with any prospect of advantage.

The operation consists in cutting a hole in the iris—making a division in its texture; and, in order that it should succeed, it is necessary that the iris should so far possess its natural powers of retraction as to draw aside the margin of the incision. Now, if the iris be preternaturally changed—if it be thickened by the deposition that has taken place into its substance—the operation would not succeed; you might make an incision through the iris, but that incision would remain a mere line; the iris would not retract so as to convert the linear incision into an opening of some size.

The evidence of the iris being in its natural state will be afforded by its retaining its proper colour; this may be ascertained by comparing it with the sound eye, where the peculiar fibrous structure which distinguishes its anterior surface will be very apparent. If, therefore, it is found to be changed, and its fibrous texture obliterated, there will be great doubt whether you can succeed in making an artificial opening. The two circumstances, therefore, requisite for the performance of the operation, are a natural condition of the retina (at all events, such as enables the patient to distinguish between light and darkness), and a natural state of the structure of the iris.

The conditions of the eye in which the operation is applicable are very numerous. The state of the pupil, the circumstance of its being filled, or not, by an opaque adventitious substance—the condition of the cornea—the question whether the iris has been prolapsed, and, consequently, whether the pupil remains in its natural position—

these are circumstances which produce such a variety in the details of each case that you may almost say every individual instance presents something peculiar; and it is hardly possible, therefore, to bring them all under your notice in a general description. Hence there have been a great number of operations proposed in cases requiring an artificial pupil; there are about three heads, however, to which those operations are referrible. It would be of no use to attempt to describe all the operations proposed; they are by far too numerous for any general description.

The first attempt consisted in detaching a portion of the circumference of the iris from the ciliary body. The iris is fixed, by its external circumference, to that part which is called the *corpus ciliare*. If you expose the iris by cutting through the cornea, and draw it with a pair of forceps, you will find that it will give way at the part where its greatest circumference is attached to the point between the cornea and sclerotic coat. Now it was observed, in cases where a blow was inflicted on the eye, that the iris became partially separated in that situation, and that thus a new pupillary opening was formed, the original pupil becoming nearly closed, in consequence of the sides of the opening falling nearly together, when the circumference of the iris was detached. In some such cases the individual was able to see through this new pupillary aperture, and hence arose the notion, that, by making a new opening, by separating the iris from its ciliary attachment, the patient might be able to see. This method—called *corodialysis*—has been found, however, not to answer the purpose, and has, therefore, been abandoned; for, although an opening may be made in this way, the sides of it are found to approximate afterwards—that is, the iris gradually regains its position, and the artificial pupil made by this operation is not permanent.

Another mode has consisted in making a division of the iris by a cutting instrument, and this has been called by the German writers, *corotomia*. If the pupil be closed, the cornea transparent, and the anterior chamber in its natural state, you will find that the fibres of the iris are on the stretch; therefore if you make a plain cut through the iris in any direction, the margins of that incision retract after the incision has been made: an opening of considerable magnitude is thus formed in the iris. This is a mode particularly applicable in cases in which there is no crystalline lens—in cases, for instance, that occur after operations for cataract. Now different modes have been adopted for making this artificial aperture; there was a mode proposed by the late Sir William Adams, which consisted in employing a very narrow knife, hardly larger than a cataract



needle, called an iris-scalpel. The one I now shew you [exhibiting it] is about twice as large as is necessary. This instrument is introduced through the coats of the eye behind the iris, in the situation in which you introduce the needle in depressing the cataract; it is then carried through the iris into the anterior chamber on the temporal side of the eye, and being placed just in front of the iris, is gently drawn back by a sort of counter motion, so as to cut through the fibres of the iris. Such is the operation of incision for an artificial pupil, called the operation of corotomia. We will suppose what I am now drawing [making a diagram on a board, with chalk] to represent the iris with a closed pupil. Now, in this mode of operating, a transverse incision would be made through the middle of the iris, that would, at the time of making it, be a simple incision; but then you would find that the edges of the iris (the fibres being on the stretch) would retract, so that, after a little wound of this sort, the opening would present something like the figure I now shew you. The retraction of the edges of the iris would make an aperture of considerable size. This operation would answer equally well if the incision were made perpendicularly instead of transversely, for then the edges of the iris would retract, so as to give the opening in the pupil this shape. In this book—which is the work of Sir Wm. Adams—there is the representation of an eye on which the operation was performed. This [referring to the drawings] is the very contracted pupil, as it was before the operation was performed, and that is the size of the opening after the incision into the iris.

I should mention to you that this iris-scalpel can now be so made by a dexterous instrument-maker that it shall not be larger in size than an ordinary cataract-needle, and, consequently, the wound we make in pushing it into the eye is not greater than that created in the operation of depression.

Another plan of making this incision in the iris has consisted in the employment of a very minute pair of scissors—a pair not much larger than an ordinary probe [exhibiting them.] The mode of performing the operation with these consists in making a small opening in the cornea, near to its circumference, just as you would do in the extraction of the cataract, excepting that it need not be so large. Of the two blades of these scissors, one has a probe-point and the other a sharp point. When you have made the opening through the cornea into the anterior chamber, you pass the sharp point of the instrument directly through the iris, near its ciliary or greater circumference; the probe-point passes under the edge of the cornea, and it is carried on for some distance; you then divide the iris by closing the blades. Such

is the mode of making an incision with the scissors, instead of the iris-scalpel. Both these operations are applicable only to cases in which the fibres of the iris are on the stretch, and where the cornea remains transparent.

Now there are other cases in which a considerable portion of the cornea is opaque—the central part, we will say, is opaque—and in that state, which is called leucoma, the circumference remaining transparent, the opaque part completely covers the pupillary aperture; yet the circumference of the cornea being transparent, if you could make an opening in the iris opposite to that transparency, the patient might recover his vision. This is accomplished by another kind of operation—where you cut out a piece of the iris; it is called by the Germans *corectomia*—excision. It consists in making a small opening through the cornea at its circumference, close to its connexion with the sclerotica, making pressure on the eye, so as to cause prolapsus of the iris, and then seizing and cutting out a little bit of it. You may lay hold of the portion of the iris that is prolapsed with a pair of forceps of the kind I now show you (forceps consisting of a double hook), or by an ordinary pair of minute forceps, and cut it off with any small pair of scissors. This was a plan proposed by Mr. Gibson, of Manchester, and there is a case in his work illustrating the different parts of the process. These represent artificial pupils so made [exhibiting some plates].

Now, such are the three modes by which the artificial opening may be accomplished. You sometimes find that the iris cannot be squeezed out, or made to prolapse through an opening created in this manner, and you therefore introduce a minute hook into the eye, with which you draw out a little of the iris; or you may employ a double hook. There is an instrument consisting of a double hook; that is, it has two small books attached to the ends of something like a pair of forceps, but which, when you press the instrument together, forms a single hook; you can introduce this into the eye, and on opening it you can take a double hold; a single hook might perhaps tear through the iris. If you come to look into works on subjects of this kind you will find a number of minutiae described which it is not necessary for me to enter upon now. I merely attempt at present to lay before you the general mode of proceeding; you must yourselves adapt the operative process in each case to the exact circumstances of that case. By one or the other mode of proceeding I have mentioned, or by some modification of it, you will be able to make a new aperture in the iris, in any instance in which the operation may be required.

I should observe to you, respecting the operation for an artificial pupil, that the

question respecting the proceeding arises only in cases where the eyes have suffered considerably from previous inflammation. It seldom happens, therefore, that the change in the condition of the pupil, which prevents the transmission of light through it, is the sole change that the eye has undergone; frequently there are other extensive and important changes of the organ, which render the success of the operation very doubtful. In many cases, therefore, the operation is attempted and undertaken with but slender hope. If, however, the patient cannot see at all, and you conceive that there is even a distant prospect of success, it may be better to make an attempt to relieve him than to leave him in hopeless blindness. In cases where the edges of the pupil are not completely fixed, either by adhesion which the parts have undergone, or other change, it would be expedient, before you attempt the operation for an artificial pupil, to apply belladonna to the eye, to see whether you can improve sight by a partial enlargement of the opening. The action of the belladonna does not require that the whole of the edge of the pupil should be free from adhesion; if a small portion of the pupil be unadherent, the belladonna will enlarge the pupil at that place: say that a quarter of the circumference of the aperture is unadherent, it may enlarge the pupil in that situation, though the other three-fourths continue fixed; and if it should so enlarge it as to bring it within the sphere of the transparent cornea, you may find that the belladonna will give all the relief that can be afforded by a new pupil. It is necessary, therefore, to try this first; and I may observe, that where you use the belladonna, whether it be a case of cataract or one of contracted pupil, or one in which the pupil is partially covered by an opaque cornea, if the pupil be so enlarged as to admit the rays of light to pass through it, which they will not do in its contracted condition, it is not necessary to resort to the operation; the patient can obtain the assistance required by the action of the belladonna. The peculiar effect which the belladonna produces on the eye is continued as long as it can be employed, the effect of the substance not being lost by its frequent use. In this case the external employment of the belladonna does not resemble the internal effect produced by it and other narcotics; these lose their influence in the course of time, but the belladonna produces the dilatation just as well at the end of many years as it does at the commencement. I have known a gentleman use belladonna for twelve or fourteen years in this way, and the application at the end of that time enlarged the pupil just as well as it did at the beginning; there was apparently no weakening or diminution of its influence by the continued use of it throughout so long a time.

It is necessary to employ the same precautions in preparing the patient for the operation for an artificial pupil, and to pay the same attention to his condition, both before and after the operation, as are necessary in the operation for cataract. And I should observe further, that whatever process you employ for making an artificial pupil, it will be necessary to make the opening as large as you can. In all these cases there is a disposition in the opening to contract afterwards, and consequently, although you may make an opening which seems very large at the time, you will find ultimately that it is no larger than is required; whereas if you make it just as large as it may appear to be necessary, it will probably in the course of time become less so; make it, therefore, as large as possible in the first instance.

#### *Accidental Injuries of the Eye.*

The subject of accidents to the eye, embracing the introduction of extraneous substances into the organ, and the wounds which may be inflicted on the globe of the eye, I have not yet mentioned. It is very common for various minute substances to pass between the eyelids, and to get in contact with the external surface of the globe, or to adhere to the internal surface of the eyelid, in both cases causing great pain by the mechanical friction produced by the various motions of the eye and eyelids. By drawing down the under eyelid, and directing the patient to look upwards, you may easily examine the state of the inferior half of the eye, and ascertain whether any extraneous substance is there. By elevating the upper eyelid, and directing the patient to look downwards, you can bring into view the superior half of the globe; but in order to ascertain the state of the upper eyelid it is necessary to evert it. This is the more necessary where the substances have passed into the eye, as in most instances they become entangled in the upper eyelid. You would at first hardly believe how great an inconvenience is experienced from the lodgment of a minute particle of dust beneath the upper eyelid; it adheres to the mucous surface of the lid, and every time the eyelid moves, the foreign substance rubs against the sensitive cornea, and produces the greatest pain; indeed, if the patient be not relieved, he gets no rest at night, and a considerable degree of inflammation comes on. In nine cases out of ten, when dust blows into the eye, and the patient continues to be troubled by it, you will find that it is lodged under the upper eyelid: in order to detach it, all you have to do is to invert the eyelid, so as to get a view of its mucous or internal surface. Take the ciliary margin of the eyelid between your finger and thumb, draw the eyelid downwards and forwards away from the eye, and with the end of a probe make

pressure against the upper part of the lid; then carry the ciliary margin backwards over the end of the probe, and you thus completely expose the mucous lining; you will see, perhaps, on the surface, a little black speck about the size of the point of a pin; take that off with a probe, and the patient is immediately relieved. The minute black speck is sometimes so small, that unless you have had an opportunity of witnessing its effect, you would hardly believe it could produce so much inconvenience.

Sometimes an extraneous substance of larger size may pass between the eyelids, and rest on the angle of the reflection of the conjunctiva that lines the eyelids and that portion which is continued over the globe of the eye. From its situation, when once you have ascertained that any foreign substance is placed there, it can easily be removed.

Extraneous substances sometimes rest on the surface of the cornea, and produce nearly the same inconvenience upon motion as if they were attached to the under surface of the upper lid, though not quite so great pain, as the under surface of the eyelid is not so sensitive as the anterior surface of the cornea; when the substance rests on the cornea the irritation takes place on the under surface of the palpebra, but when the substance rests on the under surface of the eyelid, irritation of the cornea takes place. Extraneous substances lodged on the cornea chiefly consist of pieces of metal thrown off by smiths and other workers of metal; they are generally applied in an ignited state and with considerable force, so that they do not always rest on the surface of the cornea, but sometimes sink into and become impacted in its texture. You may see a small brownish speck on the surface of the cornea not larger than the point of a pin; it is expedient to detach it if you can, for if it be allowed to remain it will excite inflammation of the cornea, —sometimes a pretty active inflammation of the eye. You cannot, however, separate this speck by the end of a probe; it adheres much too firmly. You will detach it most easily by means of a cataract needle. You get the patient into a good light, separate the lids with your fingers, and direct the patient to look attentively and steadily at any object before the eye; you thus have a clear view of the extraneous substance. When you do this, by the end of a cataract needle you may lift the substance out of its situation; sometimes, however, it is done only with great difficulty.

*Penetrating Wounds of the globe of the eye* are attended with great risk of serious inflammation of the organ. In the operation for cataract, whether by extraction or depression, we inflict a penetrating wound upon the globe, but there we employ instruments of the most delicate kind, and extremely sharp, so that they wound the organ with very little vio-

lence. We employ them, or at least we ought to employ them, in such a manner as to inflict the wound very gently, and we operate on patients carefully prepared by previous attention to diet and other matters. Yet under all these advantages we frequently find that these wounds produce violent inflammation; inflammation, in fact, which entirely frustrates the object of the operation. We need not, therefore, be surprised that ordinary wounds inflicted by blunt, rough, coarse substances, with considerable violence, attended with laceration and contusion of the parts, and taking place in individuals who have by no means been prepared for such an injury—we need not wonder that these wounds are attended with very serious inflammation of the eye, in many instances destroying the powers of the organ.

Penetrating wounds of the eye in general require a very active antiphlogistic treatment, together with absolute rest of the eye, and low diet; that is, with all the auxiliary circumstances that can conduce to lessen inflammation or prevent its occurrence. Blood should be freely taken from the arm, more particularly in young and strong individuals; leeches should be applied in considerable numbers round the organ; and these means should be continued until all fear of inflammation from the wound is removed. This kind of treatment applies to all instances in which a wound has penetrated the cornea or sclerotic coat, and, *a fortiori*, if it go deeper, that is to say, if it reach the iris, the crystalline capsule, and lens, or if it should go through the choroid coat and retina as well as the sclerotic coat, it is, obviously, indispensably necessary. Indeed in all such cases you may consider yourself very fortunate if you save vision even with the adoption of the active treatment I have pointed out, but if you do not employ it, you may be sure sight will be lost.

In penetrating wounds of the eye it sometimes happens that blood is effused either into the anterior or posterior chambers, or into both. If the iris should be detached from the ciliary ligament for instance, blood will flow and fill the anterior chamber. If blood be effused behind the iris into the posterior chamber, the case is still more serious, for that must happen by the rupture of some vessels of the tunics—either of the iris, of the choroid coat, or of the retina. The mere presence of blood, either in the posterior or anterior chamber, is of no great consequence in itself, for it will be absorbed—even if you should have the chambers completely filled with blood, it will still be removed: but then the presence of blood in the chambers of the eye shews that an injury has been offered to the interior part which is likely to be serious in other respects; and there is one mode by which such violence is likely to be very dangerous; it induces congestion of the



retina, and impairs the function of the organ in the same manner as a violent blow on the head will produce impairment of the functions of the sensorium. You know that a very violent blow on the head without any actual laceration, by producing concussion (a thing which we do not very well understand) may entirely suspend the functions of the sensorium, or very materially impair them; in the same way a blow on the eye which does not penetrate through the external tunics, the infliction of a wound which does not apparently injure any important part, may create an entirely new condition, may produce actual amaurosis, from which state recovery never takes place, by congestion of the retina only. In any case where an injury of the globe is attended with effusion of blood, particularly into the posterior chamber, it will generally happen that there is at the same time injury of the retina, and that the patient's vision is very seriously impaired. When an injury of the globe of the eye is attended immediately after its occurrence with great diminution of vision or entire loss of sight, the prognosis is very unfavourable. It may happen that by active treatment, by keeping the organ at rest, by employing those means which are calculated to prevent the occurrence of inflammation, the functions of the retina may be slowly restored, as are the functions of the sensorium after compression; but in a great number of cases the loss of vision is permanent, and we do not succeed in restoring vision when amaurotic blindness has been produced in a decided manner immediately after the occurrence of the injury.

*Disease of the Lachrymal Gland and Sac.*

The lachrymal apparatus of the eye is liable to some diseases.

The lachrymal gland, like other parts of a similar texture, is very seldom diseased. I have never seen it in a state of actual inflammation, but I have had a few opportunities of seeing chronic enlargement of it, with change of structure—of seeing it slowly enlarged in size, so as to cause protrusion of the eye from the orbit, the nature of the affection being indicated by the development of a tumor, and by the projection of that tumor externally, in the situation which we know to be occupied by the lachrymal gland, and by its pushing the eye downwards and inwards. I have removed the lachrymal gland under such circumstances, and have found it enlarged, perhaps, to the size of the last joint of my thumb; hardened in its texture, but not exhibiting that form which should properly be called schirrus. In fact, in the instances in which I have performed this operation it has been clear, that although the lachrymal gland has been very much diseased, and although the tumor—that is, the enlarged gland—has

possessed considerable firmness, yet that there has been nothing malignant in its nature. The removal of the gland has been perfectly successful.

The most common affection of the lachrymal organs is inflammation, either acute or chronic, of the lachrymal sac. The lachrymal sac, and the duct which conveys the tears from it into the nose, may be affected with acute inflammation, and at the same time a very sensible tumor forms in the internal angle of the eye; the mucous membrane of the sac becomes swelled by the inflammation, and forms a firm tumor about the size of a horse-bean. Great pain is experienced in this swelling. The tumefaction, which at first is formed in the internal angle of the eye, soon seems to spread to the lids, and then there is added to it a soft œdematous swelling of the palpebræ. The membranous lining of the sac and of the nasal duct becoming swelled by inflammation, and not being able to expand—being confined in bony canals—the tube through which the tears should pass into the nose is obstructed, and the passage of the tears is consequently suppressed, so that they flow over the lower eyelid down upon the cheek. In the more acute cases, the pain which the patient experiences is excessive; it is much greater than you would suppose possible, considering merely the extent of the mucous surface of the sac and nasal duct, for that is certainly inconsiderable; but you must recollect that these are very vascular, that they are confined in bony canals, and cannot give way; there is a sense of tension, and an acute pain which extends around the eye, and over the whole side of the head; the tumefaction of the lids is such as to produce not only complete closure of the eyes, but frequently this œdematous swelling occupies nearly the whole side of the face and head. The inflammation of the parts occupied by the swelling becomes very considerable, and the pain of the head is so great, that the patient is, not uncommonly, delirious at night; in fact, the local and general symptoms in cases of this kind—although the extent of the inflamed membrane is very trifling—are as considerable and alarming in appearance as if there were inflammation of the membranes of the brain. The passage of the tears, as I have mentioned to you, is suppressed, in consequence of the obstruction of the canal by the swollen state of the membrane. Where this inflammation takes place in the highest degree, suppuration will occur; the lachrymal sac suppurates; matter forms and makes its way out at the corner of the eye; and when the inflammatory tumefaction has become diminished, you will find a mixture of matter and mucus flowing out. This continues for a time: if the inflammation subside, the natural passage is restored, and the opening

closes. In those instances which do not proceed to the formation of matter, the swelling at the internal angle of the eye subsides, and, after a time, a thick yellow fluid escapes through the puncta lachrymalia; the inflamed surface of the sac produces a puriform discharge, similar to that which is discharged from the eye in cases of inflammation, and after distending the sac, exudes through the puncta lachrymalia, more particularly if pressure be made with the finger on the surface of the sac. This is at first yellow; then it becomes thinner, and at last it has a transparent appearance; the passage of the tears is restored, and you have no longer escape of fluid through the puncta lachrymalia.

The treatment in this case must of course be antiphlogistic. In the more violent cases, active loss of blood is necessary,—the application of numerous leeches over the inflamed sac, and about the angle of the eye, with the adoption at the same time of the other parts of the antiphlogistic treatment.

Sometimes, the inflammation goes into the chronic stage; the passage of the tears into the nose is not re-established; increased secretion takes place from the mucous membrane of the sac, distending the sac, flowing out through the puncta lachrymalia when pressure is made on the internal angle of the eye, and then the lachrymal sac at last passes into a state in which the patient experiences more or less inconvenience from this increased secretion, from the occasional more active inflammation to which it is subject, and from the permanent flow of the tears over the lower eye-lid, from which inconvenience he generally endeavours to obtain relief by an operation for re-establishing the natural course of the tears. This state of chronic inflammation sometimes arises slowly, and without the previous occurrence of acute inflammation. A small swelling gradually takes place in the internal angle of the eye,—a swelling which is colourless, or, perhaps, but slightly coloured; the eye waters—that is, the water flows down from the eye over the cheek, instead of going into the nose, its natural passage. Now in this state, perhaps, the patient experiences some pain in the angle of the eye; at all events, the eye feels weak, the vessels become distended; on using it, it will not bear exertion as in the natural state, and if the end of the finger be pressed on the small tumor that arises in the internal angle, there flows out through the puncta lachrymalia, either a thin yellowish fluid, or a viscid ropy semi-transparent fluid with yellowish streaks in it, or a clear fluid, partly of a watery description: these fluids arise in consequence of greater or less inflammation of the sac. Sometimes, when the tumor is pressed on, it subsides, and no efflux takes place, except through the nasal duct into the nose.

In the chronic inflammation of the lachrymal sac attended with this tumor, the first object is to remove the inflammation, by leeches, and other such means. When this is accomplished, you will sometimes find that the natural course of the tears into the nose is re-established, for no doubt in all these cases the obstruction of the tears into the nose arises simply from the inflammatory tumefaction of the membrane lining the nasal duct. If, however, the passage is not re-established, you may apply mild astringent lotions to the surface of the eye, or at least to the internal angle, where they will be taken up by the puncta lachrymalia and carried into the nasal duct; this sometimes has the effect of restoring the passage. A solution of alum, or of the sulphate of zinc, or of the nitrate of silver, will answer the purpose. If the course of the tears be not restored by the employment of these means, supposing all inflammation is removed, and that the patient experiences no inconvenience from inflammatory affection,—that he merely suffers from occasional distention of the lachrymal sac—it will perhaps be best for him to submit to the inconvenience, as he can liberate himself from it by pressing the distended sac with his fingers once in the twelve or twenty-four hours. If, however, as sometimes happens, there be a permanent obstruction of the nasal duct, so that the tears will not pass down into the nose, and if inflammation be kept up in the sac, producing redness of the integuments covering it, giving rise to repeated inflammation of the integuments, and also to attacks of inflammation more or less severe of the mucous membrane of the eye—then it becomes necessary to adopt some measures for permanently re-establishing the course of the tears. Various means have been had recourse to for this purpose, but I shall only mention that which is generally employed and most confided in; it consists in making an opening externally into the distended sac, with a sharp-pointed double-edged knife. The anatomical points which denote the situation of the sac are so clear that there is no difficulty in making an opening into it. But the proceeding in question is rendered still more easy in these cases, in consequence of the distention of the sac pointing out the situation for the operation; you see a small swelling at the internal angle of the eye; you plunge a knife into it; introduce a probe through the opening until it comes to the part where the passage is obstructed, and then force it into the nose; after that you take a piece of bougie, about three-quarters of an inch in length, introduce it into the opening, and leave it there, bending the extremity where it rests on the edge of the wound. After this has been in for two or three days, take it out and introduce a larger one; and when the opening is not sufficiently enlarged in this

way, you remove the bougie, and instead of it place in the sac and nasal duct a kind of small silver probe with a black head, which has been called a nail-headed stile, and which remains in the internal angle of the eye. The instrument is contained in the lachrymal sac and duct, and although it would appear on first sight that a piece of solid substance like this would prevent the tears from passing down through the duct, yet we find that in this case, as in that of an instrument in the urethra, the contracted part enlarges around it, and the tears find their way along it into the nose. The patient is obliged to wear it for a considerable time; it is not very safe to remove it, as there is a great disposition to a return of the disease in those parts. This is certainly the simplest and most effectual mode of proceeding for the relief of such patients.

#### *Extirpation of the Eye.*

I shall just mention to you shortly the mode of extirpating the eye in cases requiring amputation.

I have had occasion to mention, in speaking of cancer, fungus hæmatodes, and melanosis, that the globe of the eye is subject to those three affections. The eye is liable to cancer—that is, the globe of the eye may be converted into a schirrous mass, in which all trace of its natural structure is lost. In case this change should be confined to the globe of the eye, and not extended to the eyelids, and should it also be loose, it may be expedient to give the patient the chance of relief by removing it. In the case of melanosis—that is, in the conversion of the eye into a peculiar black texture—a substance of a sooty blackness—provided the change be confined just to the globe of the eye, if you suppose the optic nerve is not involved in the disease, and have no evidence that any internal organ is affected—you may also give to the patient the chance of benefit from extirpation. In many cases where it has been performed early, the operation has been successful, and the life of the patient has been saved; if the operation be not performed, we know that the tendency of the complaint is to destroy life, and that it will go on to this end.

With respect to fungus hæmatodes the case is different; even when the operation has been performed at the very earliest periods the cases have invariably been unsuccessful: the disease has returned in this or some other organ of the body, so that where the eye has been removed, and where the newly-deposited texture has been completely confined to the textures of the eye, relapse has taken place.

Now the operation in any of the cases I have mentioned is very simple, and very easily performed. You want to obtain a

complete exposure of the anterior surface of the eye, and the best mode of doing this is to slit up the external commissure of the eyelids, making the external opening between the eyelids about half an inch larger than natural, so that you can turn the eyelids out, and get the anterior surface of the globe completely exposed; then with an ordinary knife—the common scalpel—you cut through the conjunctiva which passes from the upper eyelid to the globe, and continue dissecting close to the superior surface of the orbit, separating—which is very easily done—the loose cellular texture that exists between the globe of the eye and its parietes, until you have gone as far back as possible; you then proceed in the same way at the sides and below, so as to insulate the whole from the bony cavity; the diseased mass then remains connected only in the fundus of the orbit by the optic nerve and by the muscles, through both which you cut by an instrument passed in on the external side of the orbit; the external side slants inwards in an oblique manner, while the internal is nearly straight; you can easily carry in a curved knife, or a curved pair of scissors, on the external side, and cut through the optic nerve and muscles—the mass then comes out. All you have to observe in the dissection is, to carry the instrument closely in upon the surface of the bone, yet not so as to cut actually upon the surface of the bone, for you will recollect that the upper surface of the bone is very thin, that it might easily be punctured by the sharp end of the knife, and that if this accident occurred you would wound the dura mater. When you have thus removed the parts, you must just examine the orbit with your finger, to satisfy yourself that you have removed the whole; and if you have left any part behind, take it out; be particularly careful that you have taken out the lachrymal gland; it is in a kind of hollow, and might easily be left behind if you were not particular in its removal. When the eye is removed for cancer or melanosis, you must take away the whole of the soft parts contained within the cavity of the orbit—the patient is not safe if you leave any part behind. After removing the general mass in the first place, see that you have taken out the whole, by looking carefully over it, removing any fragment that may have been left behind. In cutting through the optic nerve and dividing the ophthalmic artery—which is of considerable size, being a large branch of the internal carotid—you will find that it bleeds very freely. It is situated so deeply, that you cannot possibly tie it, and the patient generally loses a considerable quantity of blood; however, the bleeding for the most part stops spontaneously; it may, however, be necessary to arrest the bleeding, and you must do this by compres-



sion; fold up a piece of lint of a conical figure, and pass it into the orbit, so that it will press against the bleeding orifice of the divided ophthalmic artery—after a certain length of time remove it. Having thus taken away the contents of the organ, bring the flaps over the orbit, and confine them by a couple of sutures, where you have slit up the external commissure; then cover the parts with a rag dipped in cold water. You must by no means think of doing that which is sometimes practised—that is, introducing lint or sponge into the cavity of the orbit. Some operators seem to think that because they have made a large hole in the orbit they ought to introduce something by way of filling it up again; but this cannot be of any possible service, while, like all other extraneous substances, it is very likely to excite inflammation. You will recollect, too, that the cavity of the organ is closely connected with the cavity of the cranium, that the fibrous membrane which lines the orbit is in immediate continuity with the dura mater, and thus that inflammation arising in the cavity of the orbit will generally extend itself into the cavity of the cranium; so that all means, both with respect to dressing and other treatment, are to be adopted, which are calculated to diminish the chance of the occurrence of inflammation.

#### LECTURE LXXIV.

**DISEASES OF THE EAR.**—*Inflammation (Ear-ache)*—*Discharge from the Meatus*—*Polypus*—*Morbid Secretions of Wax*—*Various kinds of Deafness.*

**DISEASES AND WOUNDS OF THE MOUTH, &c.**—*Inflammation*—*Cancer*—*Ulcers, &c. of the Tongue*—*Inflammation, &c. of the Gums*—*Ranula*—*Affections of the Salivary Glands*—*Wounds of the Gullet and Esophagus*—*Stricture*—*Application of the Stomach-Pump, and of the Probang.*

THE various parts of the organ of hearing are liable to inflammatory affections, and the cases in which these occur are, from the severe pain which accompanies them, usually denominated *Ear-ache*; for, partly in consequence of the firm unyielding nature of the textures which are the seat of inflammation, and partly in consequence of their being contained in unyielding bony cavities, the pain and other local symptoms are extremely severe. When the inflammation is active, the pain and the determination of blood to the neighbouring parts of the head are very considerable, and the local disturbance is attended with serious constitutional sympathy, so that the sufferings of the patient, both as regards the local symptoms and the general indisposition, are much greater than you might expect, considering merely the extent and comparative importance of the

affected parts. Inflammation seated in these textures may proceed to the formation of matter, which may find its way through some of the natural outlets, such as the meatus auditorius externus, or the eustachian tube: or it may come out by an artificial opening through the membrana tympani; or it may make its way through the mastoid cells and the integuments behind the ear. The inflammation thus produced, and the suppuration, may extend to the bony parts containing the membrane, and thus destruction of the tympanum, or caries of the mastoid cells, or of the petrous portion of the temporal bone, may be produced: this inflammation in the bones may extend to the membrane that lines certain parts of the ear, running to the dura mater itself, and thus occasion serious inflammatory mischief in the interior of the cranium. These cases, therefore, in their eventual termination, may thus become more important than they appear in the first instance to be, merely as inflammations of the ear.

For the reasons I have mentioned, you will see the importance of very active antiphlogistic means. In the outset of the affection, indeed, copious depletion is necessary in many cases, simply as a mode of relieving the patient from excessive suffering, independently of its importance in putting a stop to the inflammation, which might proceed to the serious consequences I have just mentioned.

After inflammation arising in this way, you may have puriform discharge from the meatus auditorius externus; and when this is connected with a diseased state of the bones, the matter discharged frequently is very offensive. In other instances, matter is discharged from the meatus auditorius externus, arising apparently from a simple inflammatory affection of the lining of the meatus: it has then more of a mucous character—it sometimes also has an offensive smell.

Whether the discharge arises from one or other of these sources, it is very difficult to be remedied. The discharge produced by a morbid state of the bones can of course only be removed with such disease itself; but even that which arises from inflammation of the mucous membrane we find very difficult to remedy; the nature of the parts, and the connexion they have with other organs of importance, and the facility with which inflammation may be excited and communicated to them, render it very dangerous to employ any active means of an astringent or stimulating kind to stop the discharge. It is by no means uncommon to have discharge of either of these kinds from the meatus auditorius externus, more particularly in young subjects, going on for years without our being able very materially to check it. If it appear that the discharge simply proceeds from the inflammatory state of the lining of the meatus, there can be no

objection to the cautious injection of mild astringents or stimulants; but all these means should be employed very carefully, for you will find that in the majority of cases you cannot remove the affection. We deem it better, therefore, to allow the disease to proceed to the natural termination which puberty sometimes puts to it, rather than run the risk of exciting inflammation in those parts, or in the important organs connected with them.

The meatus auditorius externus is liable to the growth of *Polypi*, very similar in their structure to the mucous polypi that occur in the nose; and they must be treated in the same way—that is, they must be drawn or torn out.

The secretion of the ceruminous glands of the meatus sometimes fills it up, and mechanically impedes the transmission of sound, producing, in the first place, imperfection in hearing, and, if the accumulation go on to a considerable extent, almost complete deafness, which, being merely mechanical, however, is easily remedied. You have no difficulty in determining the nature of the case, for if you look into the ear, you see the accumulated ceruminous secretion. If the head be turned a little on one side, and you draw aside the external ear by laying hold of the tragus, you can see the whole length of the meatus down to the membrana tympani, and consequently you can very easily satisfy yourselves whether the meatus is filled by ceruminous secretion or not. When it is, you observe the accumulation to be nearly of the colour of a tamarind. This source of inconvenience is relieved by employing a syringe and warm water. A small syringe is of no use; you must have a large one, which will enable you to throw in fluid with some force. Use simply warm water, throwing it in with a moderate degree of force in the first place, and increasing that force, if you find it necessary, in order to remove the accumulated matter.

The causes of deafness are, in many instances, very obscure; sometimes, however, its nature is obvious. Persons very often suffer deafness in consequence of catarrh—that is, they become deaf whenever they catch a cold. The mucous membrane of the throat becomes affected with catarrhal inflammation, which is propagated through the eustachian tube to the lining of the tympanum; or the eustachian tube in the throat is the seat of catarrhal inflammation, and the tumefaction closes the orifice of the tube: in either of these ways partial deafness is produced, depending on cold; but it ceases as soon as the cause is removed. When the inflammation of the mucous membrane subsides, the eustachian tube resumes its natural calibre, and the cause of the deafness no longer exists.

A state of deafness may be produced by inflammation propagated along the eusta-

chian tube to the lining of the tympanum, attended with more or less uneasiness in the ear, with symptoms that may require leeches and cupping behind the ear, and other antiphlogistic treatment, by which a stop is put to the affection.

Again, deafness is sometimes produced in consequence of chronic enlargement of the tonsils, which compresses the expanded orifice of the eustachian tube, and thus intercepts the communication between the tympanum and the external air. This is an imperfect kind of deafness—it is not permanent, and the degree varies according to the extent of the enlargement. Then there are numerous cases of deafness in which the affection comes on insensibly, and in which, no doubt, it depends on changes in some of the complicated apparatus that constitutes the internal ear. Here we do not know which part of the apparatus is out of order,—we have no means of ascertaining the exact derangement; we are quite in the dark, therefore, as to the cause of the affection, and, consequently, are unable to apply any appropriate remedy. It may happen that the disorder may be such as to be attended with some obvious symptoms of congestion about the ear, pain—symptoms of a character obviously requiring a certain kind of treatment, by the adoption of which we can relieve the individual. But there are numerous cases of deafness where the affection comes on insensibly—where it is not attended with any marked symptoms—where the patient is not perhaps aware of any symptom whatever, until the hearing is lost on one side, and where we are at a loss to determine the cause. Under such circumstances we can have no rational remedy to apply. The number of individuals who have lost the hearing of one ear—who are deaf on one side—is very great. It is fortunate that there is not the same sympathetic connexion between the two ears that exists between the two eyes. If the sight of one eye be lost, there is a great risk that the sight of the other will become weakened, impaired, or even perhaps lost; but the loss of hearing in one ear is not attended with any risk to the other.

#### *Diseases and Wounds of the Mouth and Gullet.*

Wounds of the tongue are sometimes attended with troublesome bleeding. The lingual artery is a vessel of considerable size, running on to the extremity of the tongue, and being of considerable magnitude even there. It happens sometimes, in consequence of fits, that the tongue is wounded by the teeth, and that bleeding takes place, which it is difficult to stop. I remember having had a child under my care, who had bitten very severely the substance of the tongue, just at the broadest part of its loose anterior portion; he had divided it horizon-

tally, nearly in the middle line, and bleeding took place, which I found it impossible to restrain by any styptic application. I employed in vain the oil of turpentine, and a saturated solution of alum freely, and the child had lost so much blood, that I deemed it in danger, if the hæmorrhage continued or recurred. At last I stopped the bleeding by the following measure, which, however, seems rather a rough one: I introduced, at the basis of the loose part of the tongue, from above downwards, a strong needle, armed with a ligature, and then cutting the needle off, of course two ligatures were left: I tied them tightly, one on each side, so as to embrace between the two the whole surface of the wound, including nearly half of the loose part of the tongue. This stopped the hæmorrhage; but I was rather apprehensive that by causing the loss of so much of the substance of the tongue, some bad effect might have been afterwards produced, but it was not; the appearance of the tongue was nearly natural, and the subsequent articulation of the child was perfect.

The tongue is sometimes liable to inflammation, attended with a general swelling of its substance—a general inflammatory enlargement, which may proceed to such an extent as to cause the tongue to project out of the mouth. The occurrence is not a very common one, but I have seen a few cases of it. The most effectual mode of relieving the patient consists in making one or more incisions into the substance of the tongue, by means of which a free discharge of blood takes place, and the overloaded vessels are emptied; this is attended with a subsidence of the swelling, and relief from the great inconvenience and alarm which the circumstance occasions: the swelling having subsided, no more trouble is experienced.

The tongue is liable to cancerous affections. A scirrhus tumor forms in it which proceeds to ulceration. The character of the tumor originally is like that of scirrhus tumors in other parts of the body. It is a firm incompressible growth, and proceeds to an ulcer, having the marks of cancerous ulceration; that is, there is an excavation in the centre of the tumor, a hard rising edge, and an ichorous offensive discharge. This scirrhus affection is attended with disease of the absorbent glands connected with the tongue, and has the same tendency to destroy life which cancer has when situated in any other part of the body.

The only chance of arresting this affection is by the removal of the affected part before the absorbent glands become the seat of disease. If you do so after the glands have become swelled, the disease returns. The situation and vascularity of the tongue hardly admit of your removing the tumor by the knife, and therefore in a case where you deem it expedient to proceed to this operation, you must employ the measure I have just mentioned,

that of ligature—passing a strong ligature through the base of the tumor, and tying the two portions of the ligature, one before and one behind the swelling, so as to embrace its whole basis. In a case where the affection is so circumscribed that you can accomplish this, the glands not being affected, you may attempt this mode of relieving the patient with a fair prospect of success.

There are other affections of the tongue, such as enlargement of its mucous membrane—tubercular thickening of it, sometimes attended with ulceration; there are also superficial ulcerations without much enlargement; these latter are affections of an innocent kind, they are not malignant in their nature, and yield to ordinary treatment.

In the case of such affections, you must, in the first place, regulate the diet of the patient, bring the stomach and bowels into a sound state, and then perhaps administer a course of alterative mercurial medicine, with sarsaparilla, and mild aperients. If the tongue do not get well then you may have recourse to mild astringents or escharotics—the solution of the nitrate of silver, and other remedies of that character.

We sometimes are consulted respecting children who are brought to us under the idea that they are *tongue-tied*. The child does not begin to speak so soon as the parents expected, and they fancy that this arises from the movements of the tongue being impeded by the small fold of membrane which is called the *frænum* of the tongue not being sufficiently long. I believe the cases are very rare in which the *frænum* is so short as to interfere with sucking, mastication, deglutition, or articulation. I will not venture to say there are no instances in which the *frænum* may not require to be divided, but I would observe that they are extremely rare. If you find upon opening the mouth of the child that it moves the tongue, that it turns it from side to side, and projects it from the mouth, you may be satisfied that any imperfection in its motion must arise from some other cause. But as the mucous membrane forming the *frænum* of the tongue is quite an unimportant part, there is no danger in making a division, if you think it necessary. All you have to do is to fix the tongue, and with a small pair of scissors just to snip through the *frænum*.

The lips, and particularly the lower one, are subject to cancer as well as the tongue. Cancer commences in the lip, either by the development of a scirrhus tumor in its substance, which proceeds to ulceration, or in the form of cancer affecting the skin, beginning with a tubercular thickening of the skin and proceeding also to ulceration; the latter is the more frequent form. It leads to a cancerous ulcer bearing the general characters of disease of that kind. It attacks the absorbent glands, and it contaminates the system; so that the termination of the affec-



tion when situated in the lip, if left to itself, is just as fatal as when it takes place in any other part of the body.

Here the only chance of effectual relief consists in the removal of the part in the early stage of the disease, and before the glands become diseased. The result of operations on the lip at an early period is tolerably favourable; perhaps more so than the result of similar operations in any other part of the body. The general mode of operating in this case has been to isolate a portion of the lip by two incisions, uniting at the lower part, so as to form the letter V. When the portion is taken out, the edges of the wound are brought together by hare-lip pins, just as after operating for hare-lip. Now it has been observed by Baron Dupuytren that it is not necessary to take out this triangular portion of the lip; that it will be sufficient if you merely shave off the diseased part by a horizontal incision. He says, that the scirrhus disease in those cases is not a diseased change of the substance of the lip itself, but that it is a new production developed in the lip, which pushes aside and condenses the original structure; that if you shave off this tumor, the original structure will swell out again, and the lip recover nearly its natural figure. At all events I may state, that the mode he recommends has advantages. I have removed a few cancerous affections of the lip in that way, and I have found that after the healing process has been complete the lip has regained nearly its natural form. The operation is much more simple when performed in that way, than if you make a double incision in the manner I have mentioned. In the mode that has been proposed by Dupuytren, you make a curved horizontal incision, going round the boundary of the disease, observing merely that you carry your incision so as completely to remove the whole of the diseased part. If you defer operating in these cases until the absorbent glands are affected, the result is unfavourable; the patient perishes in consequence of the extension of the cancerous disease, just as the same event would occur when cancer is seated in the mammae. It is also very important here, as in any other case of cancerous affection, to remove the whole of the diseased parts. The importance of taking away as little as you can help of the lip is very great, in consequence of the subsequent deformity that it will produce; but you must not allow that consideration to induce you to leave behind any part that is liable to suspicion. The object of your operating is to remove a disease which, if allowed to continue and proceed, will destroy life; it is much more important, therefore, to remove the whole of what may, by possibility, be contaminated, than to spare the patient a slight deformity, in consequence of taking away a little less than you might deem necessary.

The gums and the palate sometimes give rise to tumors, which assume something of the fungoid character; these must be dealt with by the knife. You must cut away and remove the diseased part; and you find it generally necessary to combine with this actually scraping away the basis of the structure from the surface of the bone, for in the gums and palate these tumors adhere so closely to the bones that unless you scrape them off you cannot be satisfied that the bases are taken away.

A tumor is sometimes seen in the interior of the mouth, to which the name of *Ranula* is given. It is usually formed between the under surface of the tongue and jaw, and is said to arise from obstruction of the excretory ducts of the submaxillary and sublingual salivary glands. We find a tumor in the situation I have mentioned, which has a semi-transparent appearance, and which varies in size from an inconsiderable magnitude to a capacity containing some ounces. If we puncture the tumor, there escapes from it a thick, transparent, viscid fluid, sometimes nearly as thin as the white of an egg, but in general much thicker, more gelatinous, and more viscid. If you merely puncture such a tumor and let out its contents, the sides of the wound made by the puncture unite, and the tumor is reproduced. If you make an incision the whole length of the tumor, you will find that the same result ensues. You might suppose that if you divided the whole length of the surface it would granulate, and no fresh secretion of jelly-like fluid would take place again; this, however, is not the case; and the only mode of dealing with such a tumor consists in making an incision through its whole length, and either dissecting away the external surface—that surface which is towards the mouth—or, when you have made the incision, rubbing the surface over with lunar caustic. These tumors are of an indolent kind, and so long as they are inconsiderable in magnitude they cause no inconvenience; we are only required to operate on them when from their size they become inconvenient. Occasionally they attain a very considerable magnitude indeed, and sometimes their contents are different from what I have above mentioned to you. A great many years ago a lady came from Canada, and placed herself under my care, in consequence of having a tumor situated under the tongue, which from its size pressed the tongue upwards towards the roof of the mouth, and occupied so large a space as to interfere considerably with deglutition and mastication, and also very materially with articulation. This tumor was sensibly felt on putting the finger into the mouth under the tongue, and it also projected under the edge of the jaw below. In the first instance I made an opening under the edge of the jaw, and there was evacuated a thin gelatinous fluid, containing particles of white opaque substance, in size,

colour, and appearance, very much like boiled rice. This opening was closed and united; the tumor shortly regained its original size, and it was then deemed necessary to remove it. I made an incision, dissecting down to the surface of the cyst externally, and denuded as much of the cyst as I could, but I found that it extended among the muscles of the tongue, and that I could not possibly dissect out the whole of the cyst; I therefore took away as much of it as I could, and a large quantity of the same kind of substance was evacuated. On then introducing the finger, I found that the cyst went quite back to the root of the tongue. When the wound made by this operation was healed, the patient seemed liberated from the inconvenience, but to my great mortification the swelling was gradually reproduced, and the patient had again the same sort of tumor as before. I found it necessary to repeat the operation—it was a very painful one; and after cutting away as much of the cyst as I could, I rubbed over the surface of the remaining part with the nitrate of silver, and, by keeping open the wound by injecting a solution of the nitrate of silver into it, and adopting all the other means I could of preventing the closing up of the wound and producing granulation; this mode of proceeding was completely successful: no doubt the cyst granulated, and was completely obliterated. In ranula, however, the proceeding adopted in the inside of the mouth is generally sufficient—that of first slitting up the surface of the tumor, and applying the nitrate of silver, or a pretty strong solution of it, to the surface of the cyst.

It sometimes happens that little calculous concretions form in the salivary ducts, particularly of the sublingual gland. I had occasion to take out one a short time ago, which was about the size of a small bean. The patient had suffered a great deal of inconvenience from it, and was not aware of the nature of the affection. I found there was a calculous substance protruding; I enlarged the duct, and took it out.

Diseases of the salivary glands are very rare. One hardly knows of any instance in which they become enlarged or altered in structure, so as to require removal. I do not therefore profess to understand exactly what is meant by cases which has been called operation for the extirpation of the parotid gland. I should rather think they are operations for tumors that occur in the neighbourhood of the gland, and that, in fact, the parotid gland itself is not removed; I can only say that I never saw a case in which the parotid gland was enlarged, or so altered in its structure, that it could be considered a case for its removal. I do, however, recollect seeing one case where there was a hard schirrous tumor which seemed to involve the parotid gland, but where the nature of the affection was such as entirely to preclude all

idea of removing it. I should suppose it would be very difficult to remove the gland, inasmuch as it includes within itself some of the primary branches of the external carotid artery; I fancy I may say to you that it is an operation which you will never be called upon to perform.

The tonsils are liable to acute inflammation, which sometimes terminates in abscess; the swelling which is thus produced frequently interferes with deglutition and respiration in such a way as to alarm the patient excessively, and to make both him and his friends apprehensive of suffocation. But this is only a temporary evil; the abscess gives way, and the symptoms are relieved. Frequently, however, we can accelerate the relief of the patient by plunging a lancet into the abscess, and letting out the matter. Holding down the tongue, look into the mouth, and if you see that the tonsil on one side is considerably swollen, is of a bright red appearance, and exhibits a prominence such as is produced by the advance of matter to the surface, you may without any scruple plunge the end of a sharp-pointed double-edged bistoury into the swelling, and give issue to the contents. Even if you should make a mistake as to the formation of matter, making a puncture into an inflamed tonsil would not be injurious.

The tonsils are frequently the seat of chronic enlargement; they acquire a greater bulk than is natural. This augmentation may become so considerable as to cause the two tonsils to meet at the entrance of the fauces, so that when you look into the throat you see that the entrance to the pharynx is completely obstructed. This is generally the result of repeated attacks of inflammation, and in this enlarged condition the tonsils are more liable to disease than in their natural state. Various inconveniences arise from this state: first, the liability to repeated inflammations; secondly, serious impediment to deglutition; thirdly, a very disagreeable change in the voice; and, fourthly, pressure on the eustachian tubes, accompanied with more or less deafness. In cases of deafness in young subjects, it is always right for you to bear in mind the possibility of this cause, and to inspect the throat before you determine on the case.

The ordinary means have but little effect in removing this chronic enlargement of the tonsils. You may give opening or alterative medicine, regulate the diet, apply astringents, such as a solution of the sulphate of zinc, a solution of alum or of the nitrate of silver, or even the strong acids, and yet you do not remove them. In instances where the affection has been present for a considerable time, where the tonsils have acquired a considerable magnitude, and where any inconvenience has existed in a marked degree, I think the shortest way is to remove the enlarged tonsil, which is done very

easily. Generally, it has been recommended to tie the tonsil: to convey a ligature over the basis of the tumor, and draw it tightly, so as to stop the circulation. The operation, however, of tying a ligature round the basis of the tumor is not very easy, and the subsequent process is very tardy, while the operation by the knife is very speedy; it immediately relieves the patient, who hardly experiences any uneasiness afterwards. You take hold of the tonsil by a hook, a common tenaculum for instance, transfix the tonsil with it, having an assistant to hold down the tongue with the handle of a tablespoon; you get a firm hold of the tonsil with the tenaculum, and then the catlin of a common amputating case will answer the purpose very well; roll hut round it so as not to leave above an inch or an inch and a half of the knife uncovered, then carry it backwards into the mouth, cut the tonsil through, and take it away. In this way I have removed tonsils a great many times, and I never saw hæmorrhage of any consequence produced by the operation. The patient in many cases does not lose a tablespoonful of blood: the throat of course is a little sore for two or three days, but not so materially as to interfere with deglutition; the surface speedily granulates, and the operation very completely liberates the patient from inconvenience.

The uvula is sometimes enlarged and elongated. It hangs down, and produces considerable irritation and inconvenience, which, however, can be effectually removed by seizing the end of it with a pair of forceps, and snipping off a portion with a pair of scissors, — a very simple and effectual remedy.

Wounds of the *pharynx* and *œsophagus* are cases which we do not very frequently have to treat, for wounds can hardly extend to those parts without involving others, particularly blood-vessels, which are so important as to settle the event of the case pretty completely. A difficulty arises in the case of wounds in these situations, as regards the conveyance of food into the stomach, and it has been recommended, under such circumstances, to feed the individual by means of a tube passed through the nose into the pharynx and œsophagus down to the stomach. I should think, that in the case of a wound of the pharynx and œsophagus it would perhaps be better to trust the nutrition of the patient to food which can be introduced into the system per anum. You can nourish a person in this way for a considerable time; I do not know the exact limit, but at all events you can effectually nourish a person by nutrient clysters for a fortnight or three weeks, and thus you can leave the parts about the throat completely at rest, to perform those natural processes which are necessary for healing the wound. I know of one instance, that of a young lady, in whom

on account of some peculiar affection about the throat, which produced excessive spasms whenever an attempt was made to take food, in which nourishment was conveyed into the system per anum for six weeks; during which time she never swallowed either solids or fluids. It appears, therefore, that you may continue thus long in a case of urgent necessity to administer food in that manner.

The introduction of food into the stomach, and the removal of fluids from it, are now very easily accomplished through the mouth, by means of the machine called a stomach-pump [exhibiting one of Weiss's,] which consists of a simple syringe, with an apparatus of tubes both for introducing into the stomach and for other purposes that are necessary in these cases. These tubes are not only very convenient and serviceable for the removal of poisonous matters from the stomach, or the introduction of such fluids into it as may be thought necessary to get rid of those poisons, but also to pass food into the stomach in instances where deranged persons refuse to take sustenance. Persons who are deranged will sometimes not take food—they will obstinately refuse it for a considerable length of time, with a view to suicide—and it becomes necessary to nourish them by force—the stomach-pump is the most convenient mode of accomplishing the purpose. In these cases the pump is used by passing a tube through the mouth, and not through the nose. Although a tube may be passed through the nose in certain cases—and I have repeatedly fed deranged people in that way,—yet I find that the mouth is more convenient. You have a wooden gag on the tube, by which you can keep the teeth asunder, if you are acting contrary to the will of the individual. You may say, how can you make the patient open the mouth so as to get this in? Put your fingers in at the sides of the mouth, and press towards the corner of the jaw, just in the interval between the two jaws. A very painful sensation is produced by this: the patient will then open his mouth, and you can introduce this tube between the teeth, protected by the gag. The syringe has two tubes—one called the side, and one called the bottom tube. Holding down the tongue with the finger, you carry this long elastic tube at the bottom through the pharynx and œsophagus into the stomach; you then apply a small tube to the side of the cylinder, called the side-tube. Now you observe that the piston of this syringe has an index to it, and on the top of the syringe are two letters—one *b*, and the other *s*; the piston admits of being turned from *b* to *s* with the greatest facility. When the index is turned towards *b*, then the communication between the cavity of the syringe and the bottom tube is open, so that if you draw up the piston, you bring up any fluid that may be in



the stomach. If you then turn the index towards the *s*, you will expel the fluid through the side tube by pushing down the piston again; and so on. On the other hand, if you wish to throw any thing into the stomach, you have only to put the index towards the *s*, then draw up the piston, and the fluid in which the side-tube is immersed is drawn into the syringe; next turn the index round to *b*, push the piston down, and the fluid goes into the stomach. So that by means of this tube you can either draw fluid up from the stomach and expel it, or you can throw it in and wash the stomach out;—of course, in the same way you can use the instrument for the purpose of administering food—the patient having the long tube in the stomach, and the end of the short one in a bason containing milk, or of the yolk of egg beaten up, broth, or any nutritious fluid. This is a very simple, and, at the same time, very effectual contrivance.

Sometimes, when persons in swallowing food have a portion of it stick in the throat, it becomes necessary for you to push it down. This is done by the use of an instrument called a *probang*. A *probang* is a piece of whalebone, with a bit of sponge at the end of it. Oil the sponge, push it into the mouth, and then downwards, until it arrives at the substance in the œsophagus, and then onwards, till you find you arrive at the stomach. At the end of some of these instruments there are little contrivances by which you may attempt to hook up bits of bone, or other substances, that may stick in the œsophagus. This kind of operation is, however, rather uncertain.

The œsophagus is subject to stricture; the tube becomes narrow, particularly about the termination of the pharynx and where the œsophagus begins, and an impediment to the passage of food into the stomach is thus produced. The patient finds that food does not go down with the usual readiness—that solid substances cannot be swallowed at all—that he can only get down things that are soft or fluid. You do not find that actual stricture exists in all cases in which sensations of this kind are experienced; there are cases where difficulty of swallowing, for want of a more precise term, is said to be spasmodic—that is, there are some persons that find a difficulty in swallowing where no disease of the nature of stricture exists. I am acquainted with an individual who sometimes (and for a considerable period) swallows with great difficulty. She sometimes finds, in the midst of dinner, that her food will not go down—she rises up from the table, and is obliged to leave the room; at other times she swallows as well as any other person. Now this condition has existed for four or five years, so that it cannot depend upon any organic change; there is no stricture, nor any

actual disease of the part. There are cases, however, where stricture of the œsophagus exists, and produces the inconvenience I am alluding to—a mechanical obstruction of the tube. Sometimes this affection is of a scirrhus nature; it proceeds to ulceration, and all the serious consequences attending that affection. In general I am not very friendly to the introduction of instruments, for the purpose of enlarging these strictures of the œsophagus; the operation is painful, it is distressing to the individual, and is rather blind work. You meet with instances in which you cannot find out whether the inconvenience arises from stricture or from something pressing against the surface of the tube. In some instances, however, we do find that temporary relief is afforded by the employment of the bougie. In cases, therefore, where attention has been paid to the diet—where soft articles of diet have been taken—where attention to the general health has not been overlooked;—in cases where all these means have been had recourse to without the affection being removed, you may proceed to the cautious use of the bougie.

#### LECTURE LXXV.

THROAT, concluded.—Wounds of the Throat—Tracheotomy, &c.—Artificial Respiration.

ORGANS OF GENERATION.—Operation for Phimosi—Cancer of the Penis—Amputation—Prolapsus Uteri—Polypus Uteri—Extirpation of the Uteri—Extirpation of the Ovaries.

Peculiar Inflammatory Disease of the Genitals in Female Children.

SERIOUS wounds of the throat are often produced in attempts to commit suicide—wounds in which the mere division of the soft parts is complicated with injury of important blood-vessels, and with wounds or with entire division of the trachea or œsophagus.

The treatment of these cases is to be conducted according to the general principles I have mentioned to you. If blood-vessels be wounded, you must of course take the proper measures for arresting hæmorrhage; but the injuries of those vessels, in some cases, are of such importance that fatal hæmorrhage ensues before you can render any assistance. So far as the mere wound of the larynx or trachea goes, no essential difference is made in the treatment of the case, and the same observation may be made with reference to a wound of the œsophagus. Supposing that the trachea has been completely divided, and that the œsophagus has also received injury, the object, of course, is to approximate the edges of the wound, and to keep them in contact, that the process of the union may go

on; and this is chiefly to be accomplished by keeping the head and neck in a certain position. If the head be bent forwards on the neck, and the head and neck be kept bent forwards upon the chest, a wound, even of the most extensive nature, occurring on the anterior and upper part of the throat, will be placed in the most favourable state for the process of consolidation. The parts by these means are placed in a proper position for union, the edges being kept together, in fact, by the mere position, unaided by any other surgical treatment. It may be necessary—more particularly if the patient be unruly, and unwilling to submit to the restraint which his case requires—and that is particularly apt to occur in instances of suicide—it may be necessary to confine the parts in this position by bandages. This is accomplished by putting on a night-cap that fits tightly, and bringing a bandage round the head, and fastening it in front to another that goes round the chest, so that the head shall be kept forwards upon the chest. The exact apposition of the edges of the wound will be aided in these cases by the use of sutures carried through the integuments. It is not expedient to do what is sometimes recommended—namely, to approximate the edges of the trachea, if divided, by sutures. The patient cannot bear sutures in this place; or, at all events, if sutures were employed, it would be necessary only to put them through the external cartilaginous tube, and not to let them come on the mucous lining at all. In general, however, a wound of the trachea does not add very materially to the danger of the patient, though the entire division of the trachea does. In the first place, a wound accompanied with the entire division of the trachea will be very likely to injure other parts; and, in the next place, inconvenience in the process of respiration may be experienced, in consequence of the adjustment of the two ends of the divided tube not being perfectly accurate: and it is difficult to make it so.

We sometimes cut people's throats professionally; but then we give to the operation the better sounding terms of *tracheotomy*, *laryngotomy*, or *bronchotomy*. We make an opening into some part of the respiratory tube, for the purpose of liberating the patient from the distress and danger which interruption of respiration produces. Whatever the cause which produces that impediment in breathing may be, we may make an opening into the upper part of the trachea, so that it is immediately below the larynx—we may cut in the interval between the cricoid and thyroid cartilages. There is in that situation a considerable space filled by a tough yellow ligament; we may make a transverse division through that ligament, and thus get such an opening as is necessary for respiration. More commonly, when making an

opening into the respiratory tube, we perform a perpendicular division of the upper part, first through the skin and soft parts, and then through the cartilaginous rings immediately below the cricoid cartilage. In this way we procure an opening, not only adequate to the purpose of respiration, but free enough for any purpose for which the operation of tracheotomy may be necessary. The circumstances that may require this operation are, first, the introduction of extraneous substances into the air-passages of the lungs; and, secondly, inflammation affecting certain parts of those passages, producing a temporary obstruction, or, indeed, impeding respiration in such a way as to threaten suffocation. Substances that pass into the throat sometimes get through the small aperture of the glottis, are admitted into the larynx, and pass down to the trachea. When this happens, excessive pain is produced in the throat, violent cough comes on, and the difficulty of respiration produced by the pain and coughing amounts often to impending suffocation. The patient has a paroxysm of excessive difficulty of breathing, with violent cough; he then, perhaps, becomes quiet again, the symptoms subside, and he is at rest; but this fit of difficult respiration and coughing is soon renewed, he is harassed by a repetition of it at short intervals, and life is, in many cases, in danger, simply from that circumstance. Sometimes, however, after a time, the paroxysms of coughing subside, and he seems to get tolerably quiet; however, the inconveniences as to respiration are renewed from time to time, shewing that the foreign substance still remains in the chest. In some instances there may be an interval of rest of some days, and then attacks of serious inflammation may come on—inflammation, in fact, of the lungs, terminating in the formation of an abscess, which may break into the trachea or some of its branches, and be discharged externally; it may loosen the foreign substance, and produce a favourable result; or, finally, the inflammation may be so serious as to be fatal to the patient. In cases, therefore, where the circumstances shew us that a foreign substance has gained admission into the larynx, it is desirable, at an early period after the accident, to make an artificial opening into the trachea, and to give vent to it. Here our object must be to make a tolerably free opening, that the body may be forcibly expelled in one of those violent efforts of the respiratory organs which its presence produces. This is one of the cases in which the operation is necessary; but we are more frequently called upon to perform it in consequence of inflammation attacking either the larynx or the trachea. The case of inflammation attacking the larynx comes under the technical head of *Laryngitis*;

and the most important circumstances are, a swollen state of the epiglottis, shewing the existence of the inflammation—impediment to respiration, and the extent to which it goes—the violent paroxysms of coughing that come on from time to time, and the peculiar sound which attends the passage of the air through the narrow rima glottidis into the lungs. The passage of the air through the rima glottidis is attended with a sound which manifestly shews that it passes through an obstructed opening. The sound, in many cases, is so considerable, that the noise of respiration can be heard at a very great distance; a circumstance which, of course, could not take place unless a great mechanical obstacle opposed the passage of the air into the lungs.

Where the cases are accompanied with symptoms which point out serious disorder in those parts, and where the repeated occurrence of paroxysms of coughing, with this noisy and peculiarly sounding respiration, have brought the patient into the greatest danger, it is expedient to give the relief which an artificial opening into the trachea affords; the patient is thus suddenly relieved from great danger, time is allowed for the inflammation of the epiglottis to subside, and the passage is got into a state fit for natural respiration. The operation is not one of great difficulty, nor is it generally very important. We divide the integuments, the cellular and adipose substance, the veins that intervene between the trachea and the skin, and make an opening into the air-tube. You can hardly wound any part of consequence, or by any possibility have considerable bleeding during the operation. It is, therefore, in doubtful cases, better to give the chance of benefit from this operation, than to allow the patient to be suffocated in consequence of the continuance of the disorder.

The operation of tracheotomy has sometimes been performed in the case of croup—that peculiar inflammation of the trachea incidental to children, in which there is an effusion of lymph, in the form of an adventitious membrane, lining the trachea and its principal ramifications, producing, of course, great mechanical obstruction to respiration. Should the ordinary means of treating such an affection fail, I should say that the operation was very justifiable. If, by the employment of local bleeding and the free administration of mercury, we have not succeeded in arresting the inflammation, rather than allow the child to perish we had better make an opening into the trachea. In some instances this has been successful under circumstances that were apparently desperate.

The operations that I have now mentioned are not necessary in the case of apparent death, which arises from suspended respiration in consequence of drowning, or from hanging, or in whatever way respiration may

be suspended for a time. In these cases the natural opening for the admission of air to and from the lungs still exists—it is not obstructed; its dimensions are not contracted; there is no reason, therefore, for making an artificial opening into it. In these cases all we want is to produce respiration. It is the interruption of respiration that causes the apparent death; and respiration can be renewed, so far as our efforts are equal to it, through the natural passages. We can introduce a tube into the nostril and impel air into the lungs, according to the course which it takes in ordinary respiration. In doing this we must close the opposite nostril, or the air will pass out again; and we must compress the œsophagus against the anterior part of the vertebral column, for otherwise the air, instead of passing into the glottis and lungs, will go through the freer opening into the stomach. We may introduce a tube of any kind that may be at hand; the tube of a clyster-pipe, for instance, or any small silver tube—any pipe about three or four inches long, will do for the purpose. We might introduce the nozzle of a pair of bellows into one nostril, and, pressing the other, gently impel air into the chest so as to produce a renewal of natural respiration. And here I must observe, that whatever mode you may adopt of assisting artificially the renewal of respiration, you must bear in mind that air passes into the lungs in the process of natural breathing in a very gentle manner; it is not impelled into the lungs with force; the sides of the chest are enlarged, and the air passes in slowly. You must not use, therefore, the bellows very violently, or you may burst the air-passages—you may produce a state of the lungs that may be fatal to the patient. Proceed very gently, and endeavour, as much as you can, to imitate the mode in which air passes into the lungs naturally. If there are any attempts at respiration, you may perhaps aid them by applying an irritating vapour to the nostrils; ammonia, or any thing of that kind, will affect the respiratory muscles, and assist the act of respiration. In conjunction with these means, particularly in the case of suspended respiration from drowning, it is expedient to employ all measures that are calculated to restore warmth to the body. When the body has been immersed in water for some time, it becomes very cold; its heat is reduced much below the natural standard; therefore, enveloping the body in warm clothes—warm blankets, for instance—and applying heat by other means also, are important auxiliaries in the recovery of persons who have ceased to respire in consequence of drowning.

#### *Organs of Generation.*

I have already had occasion, in speaking of venereal diseases, to consider the subject of warts on the external organs of generation—of phimosis and of paraphimosis—so



that I need not refer to those now. It is only necessary for me to mention the operation that may become necessary in cases of phimosis. There are some individuals in whom the orifice of the prepuce is naturally so contracted that the glans cannot be denuded—cases which we may call natural phimosis. The lining of the prepuce, in consequence of thickening from inflammation, may be brought into a similar state—that is, it may be contracted into a small circular ring, so that you cannot uncover the glans. If that contraction remains after all inflammation is put an end to, and after repeated attempts have been made to extend the prepuce gradually, it becomes necessary, perhaps, to perform an operation for its removal. I must observe, however, that this operation is not absolutely necessary under any circumstances. The contraction of the prepuce may produce inconvenience by occasioning a collection of the natural secretion of the glans, where patients do not pay those attentions to cleanliness which are necessary; but the want of power to draw it behind the glans does not necessarily impede the functions of the member, for I have seen cases where persons with natural phimosis have been unlucky enough to contract both gonorrhœa and syphilis. The operation which is performed when persons wish to have this state of the parts altered, is sometimes accomplished by simply slitting up the prepuce: this, I suppose, is something like the operation that the Jewish priests perform. I do not know exactly what circumcision consists in, but I have been given to understand that they tear the prepuce with their nails; however, if the prepuce is divided in this way, it leaves the glans entirely denuded, and void of its natural covering. The external skin, in phimosis, is not in fault—it is loose enough; it is the internal portion, and particularly the orifice of the internal lining, that is contracted. The mode of proceeding in the operation, then, is just to embrace a small part of the external skin of the prepuce in a pair of broad flat forceps, like these which I now shew you, and slice it off with a knife;—you then have the internal lining of the prepuce exposed, and you slit that up perpendicularly with a sharp bistoury. You take away a kind of ring of the external prepuce, just corresponding with the contracted lining, but you leave the remaining external portion, and simply slit up the internal lining; you thus liberate the glans, and at the same time leave a partial covering for it.

The penis is liable to the occurrence of cancer. You may have cancer commencing in the glans penis, that is, the glans penis may pass into a state of scirrhus induration, and ulcers may occur, having a hardened everted edge, and producing a thin, ichorous, fetid discharge; or you may

have cancer of the penis commencing in the integuments of the prepuce, the glans remaining in its natural state. Sometimes a disease which goes under the name of cancer, consists in the production of a warty growth from the surface of the prepuce and the glans. When the prepuce is the seat of the affection, the cancerous state is attended with contraction of the orifice of the prepuce, and a discharge of a fetid ichorous fluid from it. Sooner or later after the commencement of this affection, the glands in the groin become enlarged and scirrhus, and the disease takes the same course that cancer does in any other part of the body—it extends along the penis from its extremity towards the pubes, and will terminate fatally if the affected part be not removed at an early period. [Mr. Lawrence here exhibited two specimens of cancer of the penis.]

There is no remedy for this affection except amputation; and that can only be performed with a rational prospect of success before a scirrhus change has taken place in the absorbent glands of the groin. You must remove the penis at a part beyond the seat of the change which it has undergone; and if you can take away the whole of the diseased part—if you can amputate the penis by cutting into a part that is quite sound, and if no change has taken place in the inguinal glands—you may expect a perfect and permanent cure. The operation is very simple. In the first place, you cut circularly round the integuments of the penis, and when those have retracted as far as possible, you cut through the body of the penis; the integuments will then be loose enough to admit of their being brought together over the stump of the penis. I have never found it necessary, in amputation of the penis, to do that which is recommended by most systematic writers—that is, to introduce a bougie, or catheter, to keep the remaining portion of the urethra open. The truth is, that this proves an additional irritation;—the patient makes water very well after the operation, and the introduction of such a substance creates an uneasiness which is not at all called for.

Cancer of the scrotum I have already had occasion to consider in speaking of cancerous affections of the skin; I come, therefore, in the next place, to speak of the surgical diseases of the organs of generation of the female.

*Prolapsus uteri* is an affection which comes under the treatment of gentlemen who practise in the obstetric department, and I have no observation, therefore, to offer regarding it. *Polypus* of the uterus is a surgical affair. The tumors which pass under that name admit of being removed by a surgical operation.

[Mr. Lawrence here presented some spe-

cimens, and continued.]—This consists, you observe, of a large pyriform tumor growing by a narrow neck from the cavity of the uterus. Here is one larger than a child's head; and you observe that this immense mass is connected with a comparatively narrow neck;—the uterus is cut open, the vagina is turned back, and you see the neck of the polypus running into the substance of the uterus. You observe that this tumor was quite free in the vagina all round. It is one that I assisted in taking out many years ago. It was completely contained in the cavity of the vagina, and I recollect that the hymen was entire, notwithstanding.

While the polypus is small, it is contained within the cavity of the uterus, and therefore we have no direct evidence of the nature of the affection; but after a time, and sometimes accompanied with considerable pain, the tumor passes into the cavity of the vagina—a sort of parturition of the tumor takes place, and when in the vagina, it produces more or less local uneasiness, from its pressure on the neighbouring parts; it is very commonly attended with loss of blood; the vessels of the polypous tumor give way, hæmorrhage takes place, and the patient is supposed to have some serious disease of the uterus. Often there is a considerable discharge of matter into the vagina, for the surface of the polypus in the vagina ulcerates, and produces a copious purulent secretion, or a discharge of matter coloured with blood. When you introduce the finger into the vagina, you find a tumor situated there, which has usually a smooth uniform surface, but which may be a little irregular, more or less tuberculated, or granulated; if we carry the finger along the surface of the tumor, and find the neck of it passing into the uterus, and can observe, by feeling the os tinæ around the neck of the tumor, that it is fairly within that opening, we can have no doubt about the nature of the affection—it is the disease called *polypus uteri*. The small neck of the tumor passing through the os uteri, and the power of feeling this fairly round the neck of the tumor, is perfectly satisfactory. However, we do not always find the os tinæ fairly encircling the neck, for it may grow from the anterior or posterior labium of the os tinæ itself, so that, perhaps, you can only feel the anterior or posterior part of it.

The mode of dealing with this affection consists in the application of a ligature round the small pedicle of the tumor, drawing it as tight as the feelings of the patient will permit, and gradually tightening it until the circulation shall be interrupted, and the tumor detached. The most convenient mode of proceeding consists in the use of a double canula, such as I have here [exhibiting the instrument]. This double canula consists of three pieces, and the ligature is ap-

plied round the neck of the tumor by two of the pieces detached and separated from the third. In order to use the instrument, we take these two pieces of the canula (they admit of being separated from the third), and pass a strong silk ligature, or portion of wire, through them; you then carry this along the surface of the tumor up to its root, introducing your finger, so as to get it fairly up. You convey the ligature with this double part of the canula, in the way I have mentioned, up to the part where the tumor is connected to the uterus by its small pedicle. You then keep one of the canule fixed, and move the other slowly round the root of the tumor till the two meet. You have then got a noose of the ligature round the neck of the polypus. They are, in fact, two separate canulæ, with a single ligature passed through them; one end is passed down one canula and the other down the other. First, you introduce one into the vagina, along the surface of the tumor, as far as you can carry it; then, keeping that one fixed, you move the other slowly round the tumor, and in that way make the noose. Having made the noose, the next part of the business consists in adjusting this other portion of the instrument to the two canulæ, by which they are kept steady, and by which you have the power of tightening the ligature from time to time; then pass it through this ring, and also through this portion of the tube, at the bottom, so that it goes on each side through its respective canula: when you have brought the canulæ down to the point at which they join, they exactly fit into each other, and now the three pieces are converted into one instrument; then tying one of the strings round the ring, draw the other as tight as you can, and tie it round the other; fasten it, and leave the canula in its place, having thus embraced the neck of the tumor in the ligature. After a couple of days, having one of the strings fixed, you draw the other again as tight as the yielding of the neck of the polypus will allow; you then pass it as before, leave the canula in its place in the vagina, and thus from time to time draw the ligature tighter, until it makes its way through the root of the tumor. This is the instrument recommended by the late Dr. Gooch to be used in instances of polypi. I have employed it, and found it both easy and perfectly effective. I believe it is by far the simplest and most convenient mode of treating polypi by ligature.

With respect to cancer of the uterus, surgically speaking, a question will occur, whether it can properly be made the subject of operation, and if so, what operation should be performed for it? Of late years we have read much in foreign medical journals—particularly the French—of the operation for cutting out the os tinæ when

it is the seat of cancerous disease; and we read that a French surgeon—who, if he did not introduce this operation, has practised it very extensively—that one individual has operated in this way not less, I believe, than fifty or sixty times! That he has performed the operation of cutting out the os tincæ, and a certain portion of the neck of the uterus, in cases where they have been said to have been the seat of cancerous or malignant disease, as often as fifty or sixty times! The mode of proceeding consists in introducing a speculum vaginae, or an instrument which distends the vagina, and gives you the power of seeing to the bottom of it; then in introducing a pretty strong hook into the anterior, and another into the posterior part of the cervix uteri, drawing it down by them, and cutting it away with a scalpel to the required extent. Now, if one individual has had occasion to do this fifty or sixty times, we should suppose that a state of parts requiring such an operation would be of very frequent occurrence. I cannot, however, say that I have ever seen an instance myself in which an attempt of the kind has appeared to me to be at all feasible, according to the principles which govern our proceedings in other cases of malignant disease. If we are considering what we should do in cases of cancer of the breast, or any other part of the body, we inquire into the limits of the disease; we inquire whether we have the power of fairly removing all the parts affected with the disease; we inquire also whether the disease has extended beyond its original seat to the absorbent glands in the neighbourhood—that is, whether there is such evidence of the extension of the disease to the system generally as is afforded by the glands having taken on the affection; and we deem an accurate knowledge of all these circumstances necessary before we can venture to recommend even the simple operation of removing a tumor of this sort from the breast or any other part. Now it seems to me that we have no means of determining such points in the case of the uterus. In that, we cannot tell how far a diseased change of the cervix uteri may extend, nor how far the neighbouring parts may be affected,—we have no means of judging of this, and therefore, in my opinion, we must proceed quite in the dark in making an estimate of these points. I cannot see how we can arrive at the knowledge which would justify us in performing such a painful and serious operation. The affection of the cervix uteri, which passes under the name of cancer, is generally a state of ulceration, more or less of the phagedenic character, attended with a good deal of pain and a copious discharge, and extending pretty extensively to the surrounding parts. Now this is by no means a very uncommon disease; at the same time, it is not so frequent as to make it easy for one

person to have met with fifty or sixty cases. I cannot help thinking, therefore, that the portions of uterus removed in many of those cases cannot have been affected by any malignant disorder, and, consequently, that they must have been cases in which the disease, whatever it might have been, might have come to a favourable termination without the performance of the operation. At all events, as the matter now stands, the circumstances that point out its necessity, and the state of things that would lead one to say that so painful and dangerous an operation can be performed with a prospect of permanent success, are so unsettled, that I am for my own part little disposed to recommend the operation.

A still more serious operation has been recommended of late, and that is, entirely removing the *whole* of the uterus; and it appears to me that all the objections to the operation of excision of the cervix of the uterus apply with tenfold force to the extirpation of the entire uterus. In the first place, in the great majority of instances, the patients have died of the operation, that is, they have died within a few hours after the operation,—manifestly of the operation itself; the operation, in fact, has been fatal. If the same circumstances characterise the diseases of the uterus, which are called cancerous, that distinguish cancerous affections of the female breast, we should hardly expect the operation to be permanently successful, even if the patient did not die immediately after it, as she usually does, because we find that the affection is by no means confined to the part first concerned; that it attacks the absorbent system, that it extends to other parts of the economy, and, consequently, that the patient who has undergone the operation, and escaped immediate death consequent on it, according to the evidence now before the public, would have but little chance of ultimate recovery. According to the evidence, therefore, which we at present have, I must say that I consider the extirpation of the entire uterus totally unjustifiable.

I have had occasion to speak to you of the operation of paracentesis of the abdomen for diseases of the ovary. Now the enlargement of the ovary has been made the subject of a surgical operation of the same kind as that performed on the uterus; that is, diseased ovaries have been removed from the abdomen. The operation *merely* requires an incision to be made through the integuments of the abdomen, extending from the pubes to the ensiform cartilage; exactly the same kind of cut that you would make in examining a subject after death; but according to the evidence hitherto given by those even favourable to the operation, it appears that in some instances when this incision has been made, the tumor has been so connected with the surrounding parts



that it could not be removed, and the operators have been obliged to close up the abdomen again. I believe in one or two instances that have been published, it has even turned out, after making the incision, that there was no diseased ovary to take away; and I believe there have been one or two escapes with life. I saw a woman—I rather think she is now alive—on whom this operation was performed, and she has got a scar of the length I have mentioned to you; but in that case there was a lump remaining in the situation of the ovary as big as my head;—by the way, rather a curious mode of *curing* a disease.

The observations I have made with respect to extirpation of the uterus, apply equally then to the extirpation of the ovary: it is an operation so likely to kill the patient that I do not think it advisable to proceed to it. But there is this further observation to be made, that patients with diseased ovary often live a great many years; it does not materially shorten life, and there are many instances in which patients have lived with disease of the ovary for five, ten, fifteen, and twenty years. I performed the operation of tapping the ovary for a lady some time ago; the tumor was not very large. I let out a moderate quantity of fluid—I suppose about a gallon. She remained well, not requiring the operation again for five years, and during the whole of that time experienced very little inconvenience; but the tumor had then slowly increased to about its former size, and I tapped her again, and let out the same quantity as before. Now I really do not know any reason why that lady should not live in a tolerably healthy state for 20 years to come, though I think she would stand a very good chance of dying if I attempted the extirpation of the ovary. I remember another instance of a particularly healthy woman; she got very large, as large as if she had been at the full period of gestation; I tapped her, and let out more than an ordinary pailful of fluid, and for between two and three years there was no appearance of its return; the ovary got quite quiet; she grew well, and was able to pursue her laborious avocations; she was, indeed, quite well. For these reasons, therefore, considering that although the disease of the ovary may not be susceptible of cure, it does not, under many circumstances, materially shorten life, I should be very little disposed to practise so hazardous an operation.

*Peculiar Affection of the Genitals in Female Children.*

There is only one other subject respecting the female organs of generation to which I need advert; and that is, a peculiar kind of inflammation incidental to the external organs of children, which, in some respects, is important, for it is a serious affection of itself, and further, has been in many instances confounded with syphilis—a mistake

which has given rise to questions of a very serious nature. It occurs in young subjects of from four or five to eight or ten years of age: it consists of inflammation of the labia and the external organs generally, which assume a deep dusky red colour, and in which foul ulcerations form, with a tawny grey, and sometimes an actual sloughing surface. They are very painful, attended with a thin fetid discharge, and sometimes extend so as to occupy a considerable portion of the surface of the external organs of generation, with feverishness, restlessness, great pain, and very considerable disturbance of the health of the child. These appearances have, in many instances, been supposed to be syphilitic, and hence have arisen, in some cases, suspicions that children have been ill used; in fact, that persons have had connexion with them, and imparted to them the venereal disease; consequently, in some cases, judicial trials have been the result. I had occasion myself to see a child in whom this affection had occurred—though the severity of the affection had then gone by—where it had taken place simply in consequence of these peculiar circumstances in the state of the health, and where, in consequence of previous professional opinions that it was the venereal disease, the child was questioned and interrogated, until I believe, from fear and apprehension, she gave in to the idea that had been suggested, and strongly entertained, by the parents, and said that a certain youth had done something or other to her: this proceeded so far, that the suspected individual was taken to Bow-Street, examined there, and, in fact, tried at the Old Bailey on a capital charge of violating this young person: on that trial I gave evidence, and it is not the only instance in which a circumstance of this kind has taken place.

Now I must observe that the characters of this disease are totally dissimilar to those of syphilitic affections. There is, in the first place, an excessively deep-coloured inflammation, with great disturbance of the health of the child, in the very commencement of the affection, and then the ulcerative process that takes place on the inflamed surfaces is foul and sloughing, and of a tawny colour, totally different from the characters of any primary venereal sore.

Soothing applications to the parts are necessary in the active period of inflammation, with such attention to the general state of health as the obvious disturbance of the system may require: after this period has passed by, you generally resort to the exhibition of tonics, more particularly bark, and under the employment of these means we generally find that the health of the child is restored, and that the affection slowly gets better, though, in some instances, it has been so serious as to prove fatal.

## REMARKS ON SUPERFICIAL CANCERS,

*In which the Patients were cured without the Amputation of important Organs.*

By M. LISFRANC.

Read at the Academy of Sciences of Paris.

THE object of the author of this memoir is to prove that the surgeon may frequently save either a part or the whole of an organ, in cases which have been before considered to require the complete removal of it. Recent discoveries in pathological anatomy have shewn that cancerous diseases do not, at the same time, invade all the tissues of the organ attacked. For example, in cancer of the stomach the disease is sometimes limited to the muscular tunic, or to the cellular substance which unites it to the mucous membrane, and when all these parts are affected with the disease, we may detect, by a careful dissection, the particular part in which the malady originated. This progressive succession in the march of cancerous diseases has for a long time attracted the attention of M. Lisfranc, in his examination of the bodies of patients who had died with cancer of the breast. He ascertained, by the most attentive investigation, that the disease had for years been arrested by the pleura, which remained untouched in the midst of the malady which surrounded it. In three subjects which had died with old carcinoma of the umbilicus, he remarked that the peritoneum offered the same opposition in the abdomen as the pleura in the thorax, to the extension of the disease. The same fact was observed in various cases in which the parts attacked with cancer were contiguous to cavernous bodies.

In reflecting upon these facts, M. Lisfranc conceived the possibility of turning to the advantage of surgery the evidence afforded by pathological anatomy. Having observed that, in the majority of cases, cancer is confined to one tissue, he inferred that it might be necessary to remove only the part diseased, and not the whole organ. Experience soon proved that this idea was correctly formed, and many operations conducted upon this principle were crowned with the most complete success.

In two cases of cancer of the penis, the patients were saved from the most melancholy of all surgical mutilations. In the third case, the patient was attacked with cancer of the tongue. The

two right thirds of the organ were diseased, and were hard, tumefied, and ulcerated; the whole substance being affected. Many of the most distinguished surgeons of Paris had seen the patient, and all of them had advised the total extirpation of the two-thirds which were diseased. The healthy parts were separated from the diseased parts with a bistoury, and the latter were surrounded with a ligature, which was drawn moderately tight. No bad symptoms followed, and during the succeeding six days the tightness of the ligature was gradually increased: the portion included within it shrunk, became black, and fell off. The natural breadth and length of the tongue were still preserved, with the exception of a very small portion of the tip. The superficies had alone been diseased, and that alone was sacrificed by the operation. The parts beneath remained, and cicatrized under the influence of emollient and resolvent applications. A small ulcer remained for some time, but yielded to cauterization with the nitrate of silver. Several months afterwards the patient was shewn to the Academy: he was perfectly cured, and enabled to resume his business of an advocate, in the exercise of which his tongue was, of course, a most important part.

M. Lisfranc, in concluding his memoir, draws the following conclusions:

1. That, whatever may be the ravages inflicted upon the organic tissues by cancer, nature tends to limit the extent of the disease.

2. That morbid anatomy having afforded probable evidence of the nature of these limits, we may hope to save the organs affected, by removing only the tissues which are diseased.

3. That this idea, derived from the progress of pathological anatomy, has been acted upon with success in the cases related, and in many others which will be submitted to the profession.

That we sincerely hope the opinions of M. Lisfranc may prove to be well founded, will not be doubted; but, upon a subject of such vast importance, the clearest and most satisfactory evidence will be required. It will be necessary to instruct us how we are to ascertain the extent of cancerous disease. By what means shall we determine that one component tissue of an organ is affected with the malady, and that another is not? M. Lisfranc has formed his opinion of the limits which nature as-

signs to cancer by dissection; but the question is not how we may establish this important fact in the dead body, but how we may discover it in the living, so that we may adapt our practice to the extent of the disease. If, however, M. Lisfranc had only thrown out a hint upon the subject, totally unsupported by practical experience, it would demand the attention of the profession; but he comes before us with stronger claims—the successful result of his practice. We earnestly wish that other surgical observers may confirm his views, and that the partial removal of a cancerous organ may be found to be safe and justifiable. At present we confess we are not satisfied upon this point, although we are much gratified at the distant prospect M. Lisfranc presents to us of the possibility of lessening the severity of many dreadful surgical operations\*.

#### CASE OF TETANUS, PROVING FATAL.

A FATAL case of tetanus is detailed in the "*Journal Hebdomadaire*:" the slight nature of the cause—the time that elapsed before the tetanic symptoms were developed—and the long duration of the disease in an acute form, with great degree of violence, concur to make it one of considerable interest. The following are the most remarkable features of the case:—

L—, æt. 21, of vigorous and muscular habit, with slight incurvation of the spine, after passing a month during the vacations a hundred leagues from the capital, set off for Paris in perfect health on Nov. 12, 1829, in very severe cold weather, outside the Diligence: he was carefully clothed, and wrapped in a large cloak. A few hours after, he descended, and walked a little on the road, when he suddenly felt a sharp pain in the sole of his right foot, which was produced by his having trodden on a nail, which had pierced through his boot. He pulled the nail out, and he very soon after felt no further pain. On the 17th he arrived in Paris, having been five days and four nights exposed to great cold, 12° below zero of Reaumur. On his arrival he walked home free from inconvenience, and for several days continued his usual occupations.

On the 21st he felt some difficulty in walking, especially in going up stairs,

and slight tumefaction about the metatarsal joint of the great toe, and very slight redness was visible in the sole of the foot. Bath for the feet with bran water, emollient poultice, horizontal position, and absolute rest, were recommended.

24th.—An erysipelatous flush is observable on the tumefaction surrounding the articulation of the metatarsal with the phalanges of the great toe. An opening was made, and a small quantity of healthy pus evacuated: simple dressing was employed, and on the 28th the wound was quite healed, and he proposed resuming his occupations the next day; but in the evening he experienced rather a sharp pain about the middle of the spinal column, and morbid sensations about the pharynx and neck generally, which he attributed to a slight rheumatism he thought he had contracted in his journey.

29th.—The same. Camphorated frictions were ordered, and warm bath for the feet.

30th.—Carefully examined to-day by the medical attendant, who convinced himself that he was quite free from all inflammation, chronic or acute, of the organs of respiration or circulation. The pain in the back remains; slight rigidity of the muscles of the neck; pulse full and hard; skin hot; he had no pain in the foot or leg. He was bled to xvij. from the foot; 25 leeches to the neck. He was evidently relieved by the bleeding; the skin became moist, and a disposition to sleep was manifested.

Dec. 1st.—Return of the same symptoms, with constant spasm of the muscles of the neck. V.S. ad  $\frac{3}{4}$ xx. The symptoms were again modified.

2d.—He had no sleep the whole of the night; the head is thrown back, and the whole body seems in a state of extension; spasmodic contraction of the muscles of the thighs and legs are observable; pain in the cardiac region; pulsations of the heart irregular. Hirudines lx. in the course of the spine, succeeded by hot poultices. Opiate mixture, and xxvij. grains of musk, were administered in six doses in the course of the day.

It is hardly necessary to follow the case any further through each day; the symptoms increased in violence. He was twice again freely bled and leeches; mercurial frictions were also

\* Medical and Surgical, from a French Journal.



tried, without the slightest benefit, and the patient died on the 8th.

*Sectio Cadaveris, 17 hours after death.*—The muscles rigid and evidently in a state of contraction. The whole of the muscular tissue was injected with blood, still fluid, and most remarkable for its elevated temperature, and so great was this, that notwithstanding it was an excessively cold day, and the window was open during the examination, which lasted three hours, the hands of the operators were not sensibly affected by the cold; and even at the end of this time, the parts that had been exposed were still warm and smoking, in the same manner that we see an animal in the slaughter-house a few minutes after it has been killed. The head, spine, and limb only, were allowed to be examined. The dura and pia mater was found injected with fluid blood; the brain firm and apparently healthy. Neither the spinal column nor the nerves of the affected limb presented any appearances indicative of disease.

#### CASE OF DIVISION OF THE RIGHT CAROTID ARTERY, SUCCESSFULLY TREATED\*.

A poor man, named James Hancock, æt. 24, resident in this neighbourhood, having been engaged and detected in an intrigue of gallantry, laboured under depression of spirits, and thrice attempted suicide by hanging, in consequence of which, fears were entertained by his family that he would again resort to some mode of self-destruction, and probably a more effectual one. On the evening of the 18th of May last, the man borrowed a razor from a neighbour, for the purpose, he alleged, of shaving himself. His parents having received information of this, watched him the more closely, and observed him going into an adjacent apartment, where he put his intentions into execution; but his courage failing him, he immediately ran into the room where the family were, pressing with all his might on the bleeding vessel.

This occurred about eight o'clock, P.M. and happening to be at a house within a few yards, I was with him instantly, and found he had made *two* incisions, in a transverse direction, the one about half an inch above the other; the uppermost and first incision ex-

tended from the left side of the throat, over the *pomum adami*, for about two inches; and the other, about three inches in length, cutting deeply into the trachea, and terminating immediately after dividing the right carotid artery and jugular vein; the artery was bleeding profusely, and the stream of blood was about the circumference of a swan shot. I lost no time in securing the artery by means of a ligature, although it had receded considerably under the integuments. About a *minute and a half* only had elapsed betwixt the perpetration of the desperate act and the securing of the artery. Nevertheless, the hæmorrhage was excessive, and in this short space of time an amazing quantity of blood was lost. The man was now apparently dying; his respiration laborious and protracted; eyes glazed; pulse nearly imperceptible, and a cold diaphoresis exuded all over the surface of the body. I immediately exhibited diffusible stimuli; had his feet put in warm water, and used all means possible to produce re-animation. When vitality was again manifest, I with great difficulty applied sutures to the incisions, owing to the hacked and ragged state of the parts. Having, at length, succeeded, and applied adhesive strips, I discovered venous blood oozing from the right jugular vein (I imagined), but it soon ceased. I ordered him weak brandy and water at intervals, and, as soon as possible, removed him to bed, taking care to secure his head from falling back, and so tearing the wound asunder. I visited him at half-past ten again, and found him rather feverish, at the same time very weak. Discontinued the brandy and water, and as his bowels had not been moved for two days, administered *olei ricini*, ʒvi. and gave a mixture of tincture of henbane and camphor julep every three hours.

I saw my patient at ten o'clock on the following morning, when he complained of pain in the head and drowsiness. The bowels had been freely moved; tongue enveloped in a white coat; pulse weak and quick; considerable pain in the larynx and summit of the trachea; the wounded parts highly inflamed; deglutition extremely difficult; feet and legs cold as death, to which were applied heated bricks, and I ordered an antiphlogistic lotion to the throat externally, composed of tincture of opium, acetate of lead, and water.

I now began to fear that his consti-

\* By Mr. C. B. Garrett.—Midland Medical Reporter, No. IX.

tution would not recover from the shock it had sustained, and, as he was gradually becoming more debilitated, I exhibited, every hour and a half, ether, laudanum, and camphor julep; and occasionally sago, with a little sherry in it. He now began to recover strength, and at four P.M. I found him much better, and the pain completely removed from his head. A glow of heat diffused throughout the system, and pulse considerably elevated, and more full. Discontinued the draught, and from that time gave him saline medicines principally, with calomel and opium at bedtime occasionally.

On the 20th, I removed the dressings, and found the parts in a most healthy condition, and generating a "laudable pus," the inflammatory symptoms having considerably abated. The proper dressings, and the application of the above lotion occasionally, together with a proper attention to regimen in diet, exercise, &c. produced a salutary effect, and the man is now perfectly recovered, owing his life entirely to the immediate assistance rendered; and I have no doubt but that in half a minute longer he would have died from loss of blood. He is, however, now quite well, retaining the cicatrix as the only visible demonstration of his imprudence, and, as it were, shewing a conspicuous beacon in warning any who may have been inclined to follow his course, to avoid the shoals of dishonour and profligacy, which are the too frequent instigators of the act.

## HOSPITAL REPORTS.

### LOWESTOFT INFIRMARY.

*Case of Imperforate Vagina—Operation—Death, with the Dissection\*.*

FRANCES BAKER, æt. 14, of a precocious appearance, was admitted a patient of the Lowestoft Dispensary on the 7th July, complaining of violent paroxysms of pain in the abdomen and loins, shooting down the thighs, and with occasional difficulty in passing her urine. In the hypogastric region was discovered a circumscribed elastic swelling, rising above the brim of the pelvis, which she described as having progressively increased for the last three months. From the situation and feel of the tumor Mr. Worthington was led to suspect some uterine disease existed, and upon endeavouring to make an examination *per vaginam*, to satisfy himself upon that point, he was surprised at

an irresistible impediment to the introduction of the finger. On a more accurate investigation, the origin of the vagina was found to be preternaturally and effectually closed by a firm adhesion of the parts.

Medical treatment having failed to afford her any relief, it became apparent that the swelling and pain were owing to the uterus being distended by the retained menstrual fluid. This opinion was further confirmed by an examination *per rectum*, through which a tumor was perceptible, possessing a distinct fluctuation, and descending towards the perineum.

The operation consisted in carefully dividing with a scalpel a dense cellular structure of about half an inch in thickness, situated at the orifice of the vagina. A thin membranous expansion being left was then punctured with a lancet, which gave exit to about a pound of dark-coloured fluid. The swelling immediately disappeared, and the girl expressed herself relieved. A sponge-tent, well oiled, was inserted, and retained between the divided parts.

The third day after the operation, severe pain in the abdomen, with exquisite tenderness, supervened, together with excessive gastric irritation. Notwithstanding a strict antiphlogistic plan of treatment was adopted, the patient died the following morning.

On examination after death, the peritoneum was found to have been generally affected with inflammation: various gangrenous spots were presented to view, also a considerable quantity of lymph was effused, causing adhesion of the convolutions of the bowels. The uterus was nearly of its ordinary size, but the vagina was dilated into a pouch, contracted towards its orifice, capable of holding a pint and a half of fluid. Its parietes were much thickened, and of a semi-cartilaginous structure.

Professor Langenbec\* relates a similar case, in which death took place the fifth day after the operation, and attributes the tendency to inflammation to the long retention of the menses. He therefore very judiciously advises the operation never to be delayed when the true nature of the complaint is discovered, an opinion worthy of attention, inasmuch as some surgeons have considered all interference as improper, until such time as the tumor shall have attained a large size, grounding their opinions upon the principle, that it may then be punctured with more facility.

If the professor's views on the subject be correct, the practice of an early operation in cases of imperforate vaginæ cannot be too strongly enforced, and the reporter cannot but be inclined to believe that the unfortunate issue of this case has contributed to verify the truth of them.

\* Langenbec's Bibliothek, vol. iv. pt. 3.

# THE LONDON MEDICAL GAZETTE,

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SATURDAY, AUGUST 28, 1830.

## LECTURES ON SURGERY,

*Delivered at St. Bartholomew's Hospital,*

By WILLIAM LAWRENCE, F.R.S.

### LECTURE LXXVI.

DISEASES OF THE URETHRA.—*Hæmorrhage—Gonorrhœa Benigna—Irritable Urethra—Stricture.*

SIMPLE incised wounds of the urethra, such as those which we make in order to remove a stone when it lodges in the canal, heal very readily; for a time the urine escapes, in whole or in part, through the openings that are thus made, and that is all the inconvenience patients experience. Lacerated wounds of the urethra, such as those produced by a fall upon the perineum, unaccompanied with wounds of the integuments and external soft parts, are much more serious injuries; for in this case there is generally retention of urine, and we are often unable to relieve the patient by the introduction of the catheter; if we attempt to pass that instrument into the bladder, it escapes from the urethra at the situation where it has been lacerated, and we cannot get it forwards into the bladder. The urine, instead of being expelled through the natural course, is forced out at the torn part of the canal, and thus becomes injected into the cellular membrane, in the neighbourhood of the part at which the injury has been received; hence it becomes necessary to make an incision into the integuments and external soft parts in the perineum, so as to cut open the urethra, in order to give exit to the urine, and, at the same time, to prevent its further infiltration into the cellular membrane.

Blood is discharged through the urethra under various circumstances, either in consequence of causes affecting some part of the canal of the urethra, or of disease situated

in the bladder, or some other part of the urinary apparatus. In the former case, that is, when the blood proceeds from some part of the urethra, it passes out pure from the canal, either in a fluid or in a coagulated state; and this, properly speaking, constitutes hæmorrhage from the urethra. When the blood comes from the bladder, or from the kidney, it is mixed with urine, which becomes altered in its colour, according as it is mixed with a greater or smaller quantity of blood;—the patient is observed to make bloody urine, and the disease is called *Hæmaturia*.

The introduction of instruments, the application of caustic, and violence of various kinds, will produce hæmorrhage from the urethra—that is, the discharge of blood, unmixed with urine, from that canal.

In general, rest, the application of cold, and the employment of the antiphlogistic treatment, will put a stop to bleeding from the urethra, more particularly where the cause is of a temporary kind, and where it is no longer applied. If there should be bleeding of any obstinacy, either from the bulb, or from any portion of the canal situated in front of the bulb, we have the power of commanding it by direct pressure; we can apply pressure externally, so as to prevent the afflux of blood from any part thus situated. There are some instances, more particularly in elderly persons, where discharge of blood takes place from the urethra without our being able to point out exactly the cause of its appearance; generally it takes place in individuals in whom we have reason to suspect an affection of the prostate gland. In these cases the patients are generally a good deal alarmed by this symptom; but I have usually found, though it is not very speedily checked, that after a certain length of time the hæmorrhage has subsided, and the case has terminated favourably. I remember the instance of an elderly gentleman who had an attack of retention of urine, for which I attended him for a considerable time; it was necessary to draw off the water



regularly, which was done without difficulty, and the bladder slowly regained its power; but before his complete recovery he had bleeding to a considerable extent from the urethra, which was not from the introduction of instruments, or any cause of that sort, but came on at the time the bladder was recovering its powers, and at last ceased entirely, without any ill consequence. He had a recurrence of bleeding from the urethra four or five times, although he had regained his power of expelling the urine, and had had no occasion to resort again to the use of instruments. This hæmorrhage continued only a short time, and did not oblige us to have recourse to curative means of any consequence. I recollect another instance of an elderly gentleman who was affected with bleeding from the urethra without any apparent cause, and where no disease could be discovered in the urinary organs. He lived at some distance from town; and the gentleman who saw him in the country had introduced bougies, and made injections, for the purpose of restraining the bleeding, but with no good effect. He therefore came to town to consult me, and I recommended that those means should be laid aside, that he should be kept quiet, and that mild antiphlogistic means should be adopted; under which the hæmorrhage ceased.

Hæmorrhage, to a very considerable extent, will sometimes take place from the bladder, the urine being mixed with blood, in consequence of the mechanical irritation of a stone. I remember being sent for to a gentleman about the middle period of life, labouring under symptoms of stone, who was suffering greatly from an effusion of blood into the bladder. He became unable to discharge his urine, so that at last the bladder was excessively distended. Perhaps at intervals of half an hour, or an hour, he was able to force out about a teaspoonful of bloody fluid, with great suffering. I introduced a large catheter, and a very considerable quantity of bloody urine, with coagula of blood, was expelled from the bladder with great force; this gave him material relief. A recurrence of the bleeding, however, took place, and it was necessary to use the catheter again several times within the twenty-four hours; by the expiration of which time, from the application of leeches, the warm-bath, fomentations to the perineum, and so on, the bleeding ceased, and the symptoms disappeared. This gentleman, however, had another attack of a similar kind, in consequence of taking too much exercise, or of some improper indulgence, and it lasted for a longer period, but ultimately went away in the same manner; he afterwards underwent the operation of lithotomy, and recovered.

Hæmorrhage from the bladder sometimes takes place in consequence of organic dis-

ease affecting the prostate or bladder.—These parts are liable to disease of the fungoid kind—to fungus hæmatodes; and when this proceeds to the ulcerative stage, a flow of blood mixed with the urine is the consequence. In such cases we can do nothing but palliate the symptoms by the exhibition of narcotics, and by having recourse to the mechanical assistance which the catheter affords,—if indeed the introduction of the catheter do yield any relief.

The cause of the bloody admixture of the urine, however, is sometimes situated further than the bladder—about the kidney: here we must adopt such treatment as the local affection points out—it may be necessary to take blood by cupping, to use the warm bath, or the hip-bath, and to repeat these means according to the urgency of the affection. In a case where the affection does not yield to such measures, and where, after we have removed all inflammatory symptoms, bleeding still continues, we must have recourse to the exhibition of the superacetate of lead, or alum, internally.

Although the urethra and the penis are more frequently diseased in consequence of venereal affection, yet they are liable to suffer like other parts of the body from ordinary causes of disease: thus we may have inflammation of the mucous membrane of the urethra, attended with an increase of its natural secretion, accompanied perhaps with pain or scalding in making water; in fact, we may have a state produced very similar to that which takes place in gonorrhœa, from causes of quite a different nature. When an affection of this kind arises from other than venereal causes, it has been called gonorrhœa *benigna*—in opposition to gonorrhœa *virulenta*—the terms *benigna* and *virulenta* not indicating the mildness or severity of the symptoms, but denoting the nature of the cause which produces the symptoms. *Virulenta* means that which is produced by the morbid or poisonous matter of gonorrhœa; the other term indicates any other cause that may excite inflammation of the urethra. Changes in the state of the urine are, no doubt, capable of effecting a change in the mucous membrane of the bladder and urethra. The urine varies very much in its composition and qualities, and in some of the changes it undergoes it becomes acrimonious, and irritating to those surfaces with which it comes in contact. Most persons are aware, from their own experience, that from certain states of the nervous system, the kidneys will secrete a fluid nearly limpid like water, which nevertheless is very irritating, so that the person feels it necessary to retire to make water very frequently. That the urine undergoes great change in gout is well known; and sometimes an attack of inflammation of the

urethra will come on, accompanied with a discharge that can hardly be distinguished from that of gonorrhœa, in a gouty individual who has not been at all exposed to the cause of gonorrhœa virulenta. There is thus an *arthritic* gonorrhœa. Patients affected with any complaint of the urethra, whether gonorrhœa or any other disease, often observe an aggravation of the complaint after an excess of drinking: they will often tell us they were going on very well, but having dined in company and drank more wine than was proper, the inflammation became increased, and all the symptoms were aggravated. The urethra, no doubt, under certain circumstances, is capable of being injuriously affected by the excitement connected with sexual intercourse, more particularly if that be carried to an excess; and a state of the urethra exists in certain individuals, in whom slight occasional excitement is sufficient to produce disease. This is said to be a state of irritable urethra—perhaps it might be called with equal propriety a state of inflammation, or inflamed urethra. There is increased frequency of micturition, very commonly pain, and some degree of difficulty in passing the water. The urine sometimes passes easily, and sometimes with difficulty. There may be a discharge from the urethra in a greater or lesser quantity. The inconveniences which the patient complains of in the discharge of the urine often lead the surgeon to examine the state of the passage by instruments—he introduces a bougie or catheter. It is found sometimes that an instrument will pass easily; at other times an obstacle is experienced, so that the instrument will not readily go into the bladder—hence the notion of spasmodic stricture: it is supposed that this obstacle is produced by a spasmodic state of some of the muscular fibres surrounding the canal. Probably in this case there is no real stricture in any part of the canal, but only an obstruction produced in some situation or other by the inflammatory tension—a partial enlargement in consequence of inflammation of some portion of the lining membrane. The introduction of an instrument under such circumstances not uncommonly occasions bleeding from the urethra—that is, some of the overloaded vessels of the tender mucous membrane become lacerated by the introduction of the instrument, and bleed. In such a state disease is sometimes produced in certain parts contiguous to the urethra—inflammation or chronic enlargement of one or of both testicles may arise under such circumstances. Redness, excoriation, superficial ulceration, or even deeper ulceration of the glans or of the prepuce, may be occasioned in this way. In some individuals the glans and prepuce are more liable to excoriation and ulceration in consequence of sexual intercourse, than in

other individuals; and there are some persons who, from causes like this, hardly have intercourse without experiencing inconvenience of this sort—even individuals in married life,—in those who do not expose themselves to any risk of venereal infection.

The symptoms which constitute what has been called an irritable state of the urethra, or, rather, those which denote it, are generally got rid of tolerably easily by removing the cause which produces them—that is, by regulating the diet and paying attention to the digestive organs. In addition to this, you should apply tepid ablutions to the perineum or lower part of the abdomen, use the hip or warm bath, and give the patient diluent and mucilaginous drinks. You may also abstract blood by leeches from the perineum, or by cupping from the loins; and it may be necessary to have recourse, in failure of these means, to mild narcotics—as hyoscyamus, or to opium, particularly in the form of Dover's powder. The local administration of hyoscyamus or tinctura opii, in clysters or suppositories, may be of use in certain cases. In general it will not be found that the introduction of instruments into the urethra is of particular advantage in these cases; but yet there may be instances in which, after we have employed the remedies which we think most calculated to give relief, and where the patient still continues to suffer, we may find the stimulus produced by the contact of the instruments advantageous.

Stricture of the urethra means, simply, contraction or narrowing of the dimensions of the calibre of the canal, produced by a change of structure in some part of it, consequent on effusion produced by inflammation, or on the cicatrization of an ulcerated surface. When the urethra is highly inflamed, as in the case of severe gonorrhœa, the blood-vessels of the part become distended, and the membrane itself is thickened, in consequence of effusion within its texture; and hence the dimensions of the canal generally are diminished, so that the urine passes out through a very small canal, and one which is very irregular in its figure. Hence the patient makes water with great difficulty, passing the urine drop by drop, and ultimately, perhaps, complete retention of urine may be produced simply by the diminution of the calibre of the canal, consequent on the state of its vessels and the thickening of its membrane. This is a kind of diminution of the canal which depends on temporary circumstances; therefore it only endures for a short time and goes off again. If an instrument be introduced at this time, when all the vessels are much enlarged, it may produce a very copious bleeding. I have known a person lose perhaps a pint of blood in consequence of such

an occurrence, and that with great relief to the symptoms. Inflammation confined to a certain spot of the canal may produce effusion into the inflamed portion of the membrane, and into the cellular or the other textures immediately around it; this, if it proceeds, ultimately causes induration of the affected part, and, consequently, a narrowing of the diameter of the canal. These are permanent changes, and the contraction of the canal produced in this way constitutes what is technically called permanent stricture, in opposition to that temporary and occasional difficulty in the passing of the urine which I have alluded to under the name of spasmodic stricture. Now the permanent stricture may exist in various degrees, from a simple contraction of the membrane which lines the canal, to an induration or condensation of the textures surrounding it, and a complete hardened callosity of the parts. They may be so hardened, that on cutting through them a noise is produced, as if you were cutting a portion of cartilage; such is the extent to which the induration may proceed, and you may have every intermediate degree.

The change in question may either occupy the whole diameter of the urethra, producing a circular contraction, or it may occupy only one portion. The circular stricture is the more common; it may be confined to one spot of the urethra, and appear just as if a piece of thread had been tied round the canal; or the change may occupy a considerable extent—half an inch or more. Sometimes you have contractions of the canal of this sort, at short distances, with the intervening portions tolerably healthy,—that is, you may have one stricture, or more than one.

[Mr. Lawrence here exhibited specimens of these varieties of the affection. The first was a specimen of a contraction just at one point; the second a contracted portion of the urethra, which was perhaps nearly an inch in length; thirdly, an example of a very rigid stricture; fourthly, a urinary canal, where there were contractions at various points in the diameter of the canal.]

You will find on examining specimens of stricture, that the change is not confined simply to the smooth membrane which forms the lining of the canal, but that it extends to the textures which surround this membrane externally: thus in the bulb of the urethra, or in that part which is surrounded by the corpus spongiosum, in the case of a stricture of long standing, you will find that the latter will be completely condensed, and the cells obliterated; and very frequently you have a similar consolidation and obliteration of the cells, extending to a considerable distance around the immediate seat of contraction.—

The seat of stricture is different in different instances; most frequently it is in the membranous part of the urethra; and especially at the point where the membranous portion joins the bulb. This [exhibiting it] is a cast of the urethra; the part which swells out here is the bulb, so that there is a natural contraction between the membranous part of the bulb, and this is where stricture is most frequently formed—about six or seven inches from the orifice of the canal. This cast will show that the dimensions of the urethra are not one and the same throughout. Now you frequently meet with stricture anterior to this situation; but when you do so, you generally find, that with the anterior stricture there is also a contraction in the situation I have mentioned. You may have one or two strictures in the anterior part of the urethra, and also a stricture at the bulb. It is not very common to have stricture towards the orifice of the urethra, or at least it is much less common there than in the situation I have mentioned. When stricture occurs towards the orifice of the urethra, the patient generally experiences very considerable inconvenience from it, because in this case the whole of the length of the passage situated behind the stricture is exposed to the inconvenience produced by the obstacle to the passing of the urine: the farther back the stricture is situated, the smaller portion of urethra there is to suffer from this source of irritation; therefore you are not surprised to find that a stricture in the anterior part of the urethra is more painful, and induces symptoms more considerable in comparison, than a stricture which is situated where it is more frequently found.

The causes of stricture include all circumstances that are capable of exciting inflammation in the mucous membrane of the urethra; and of those, undoubtedly, the most frequent is gonorrhœal inflammation.

The symptoms of stricture, more especially in its earlier stage, are merely the effects which it produces in the act of expelling the urine. The membrane of the urethra is not a part of great sensibility, therefore the changes which produce a stricture in the urinary canal do not of themselves excite any serious symptoms, such as pain, or any thing of that kind. The stream of urine is diminished in consequence of the narrowing of the canal; it may be diminished so as to be no larger than a crow's-quill, or it may even be reduced to a still smaller size. The stream of urine, in fact, may be interrupted entirely, so that the patient can only void it by drops. The patient experiences a more frequent desire than natural to expel the contents of the bladder; this no doubt arises from some degree of inflammation communicating from the stricture to the mucous membrane of the bladder, occasioning



the viscus to contract when it contains a smaller quantity of urine.

The treatment of stricture may consist either in the employment of those general measures which are calculated to lessen inflammation, or in the application of means which may act directly upon the strictured part of the canal. I need not repeat to you the measures that are necessary to be employed in order to reduce inflammation, when such are indicated by the symptoms; and I may therefore proceed to consider the means that are necessary to be applied to the strictured part of the urethra itself. These means consist, then, either in such as are calculated mechanically to enlarge the contracted part of the urethra, or in those which have the effect of destroying, by their escharotic properties, the diseased portion of the canal. When I speak of mechanically dilating the contracted portion of the urethra, I merely use that expression in order to denote to you the employment of instruments which act simply in a mechanical way on the urethra, and have no stimulating properties. We can hardly suppose that the stricture is enlarged simply in a mechanical manner as we enlarge an opening in any dead matter: although the introduction of instruments at the moment enlarges the part, and is found to relieve the symptoms, and ultimately to remove the contraction, we cannot entertain a doubt that this is produced by a change in the organization of the part—a vital proceeding, and not one which is merely mechanical. For this purpose, instruments of various kinds have been employed. In the first place we use *Bougies*; bougie is a French term, which means a wax candle, or taper. The ordinary bougies are made of compositions of resin, wax, or other things of that sort, which are hard when cold, but when warm become soft. When they are introduced into the body, they become soft, and will consequently take the direction of the canal into which they are introduced. The inconvenience consequent on this kind of construction is, that their softness, when they become heated, occasions them to stick in some part of their way through the urethra, so that they do not pass so readily as substances of a permanently hard and polished nature. When the instrument curves too, it becomes more or less irregular in its shape, and hence some further degree of difficulty arises to its passing along the urethra. For these reasons the employment of plaster bougies is not so good as that of metallic instruments; hence we generally restrict them to those cases which require small bougies, and where plaster bougies, from their inclination to adapt themselves to the inequalities of the canal, are convenient. I need hardly observe to you,

that in the introduction of these or of any other instruments, their surface should be well smeared over with oil, or some other greasy substance, to render the passage along the canal more easy. Bougies are sometimes made of elastic gum; these are flexible, and in consequence of their elasticity, recover their figure, so that in most cases they are not so good as the plaster bougies. Bougies are sometimes made of cat-gut; these, however, are rough, and very liable to wound the tender surface of the urethra, in consequence of which they are very seldom employed. Then we make use of metallic instruments of different kinds—steel sounds, silver catheters, and so on. An instrument is made with a combination of metals; I do not know exactly its composition, but it has the same degree of polish that steel or silver has, and is much cheaper than a silver instrument of the same size, possessing the convenience of not rusting like steel. Metallic instruments certainly have the advantage of passing much more easily through the urethra than plaster bougies; the surface being perfectly hard and smooth, there can be no kind of adhesion of the membrane to it, and the inflexibility of the instrument gives you the power of guiding the point of it as you may wish, and of determining its general direction. In using the plaster bougie, you cannot alter the direction which the point takes; you may introduce it curved or straight, but you must push it on, and you cannot turn it to one side or the other; but you may do either of these with the metallic instruments, and thus you may obtain a much greater power with them than with the flexible plaster bougies; in fact, you will find it much more convenient to employ the former than the latter, and you will often succeed with them when you cannot get a plaster bougie into the bladder. An instrument that is perfectly straight, and at the same time inflexible, can be introduced through the urethra into the bladder. As the urethra, however, is a curved canal, instruments that are bent in conformity to the canal, pass much more easily; and as the object in the use of metallic instruments, whether catheters, metallic sounds, the staff that is employed in the operation of lithotomy, or any other kind of instrument, is the same—that of introducing it along the canal of the urethra with facility—all the instruments which are designed to be used in the diseased state of the canal, should have the same curve as the healthy canal. Now if you look at a number of these instruments in an instrument-maker's shop, you will find great difference in them with respect to their curves, a difference for which there is no good reason. A catheter, sound, or staff, should each have the same curve, if the object be to pass it through the canal with

the greatest ease to the patient. [Mr. Lawrence here shewed a number of instruments, and pointing to one, said:] This is a kind of curve which you very commonly see in sounds and catheters; but the curve that I find most convenient for all these instruments, is the one I now show you, and in which the curved portion of the instrument forms a portion of a much smaller circle than that which is seen in instruments of the ordinary kind. Upon putting this on paper, and drawing a line round it, it seems to me that the curvature here is that of a circle of four inches in diameter, which I should describe to be the degree of curvature necessary to an instrument that will pass into the bladder with the greatest ease.

In introducing this solid metallic instrument into the bladder, the most convenient mode of proceeding is, to place the concavity of the instrument towards the abdomen of the patient, although you may introduce it with the concavity downwards; or you may introduce it laterally, with the concavity towards one side or the other. In introducing the instrument thus, with the concavity towards the abdomen of the patient, you carry it in a straight direction downwards, with the handle of the instrument inclined towards the abdomen, till it is passed through the straight part of the urethra down to that part which is just below the pubes. Now then, pushing it straight on, with the same kind of motion with which you have brought it to this situation, you find that it will not pass; you come to the point where the urethra bends, and then you accommodate the course of the instrument by carrying the handle of it forwards and downwards, and thus you make the point of the instrument rise through the curved part of the urethra, and enter the bladder. If you use an instrument with the curve I have mentioned, and introduce it gently in this way, the urethra being in a healthy state, you will find that by merely getting to the upper part of the urethra, it will fall into the bladder by its own weight; in many cases, you hardly want to guide the instrument at all, if there be no impediment from stricture or disease: this is the clearest proof that such an instrument is well adapted for introduction into the bladder. I think it expedient, in the introduction of all instruments of this kind, to let them pass very gently, and to let them find their way slowly into the bladder, although this may not appear the most dexterous mode. You will sometimes see persons introduce an instrument into the bladder almost as if they were performing an act of *legerdemain*; they push it quickly down, and pop it in; it looks more clever if you do it in that way, but then, if you do not happen to pop it in just in the right manner, you hurt the patient, perhaps, severely; at all

events, I should like a surgeon in operating upon me, to do it gently; and, therefore, I follow the rule of doing it gently and cautiously. In the introduction of the catheter, you in the first place, select such an instrument as you think will probably pass into the bladder; oil it well, and then introduce it into the orifice of the urethra; you come, perhaps, to a point where it may be stopped; you allow it to rest for a little; you then apply a very slight degree of pressure, and still, perhaps, you find it will not pass; then take it out, and try one of a smaller size, and in this way find out what degree of instrument the urethra will admit. Having made this discovery, you introduce the bougie or sound down to the stricture; perhaps you will find it pass gently through it into the bladder, or you will find the point stop for a minute or two, and with a very little force find its way into the bladder; after thus introducing it, you may leave it for a short time, and then withdraw it. You repeat the introduction of the instrument in three, or four, or five days, and increase the size gradually. You will find by introducing it thus, that the strictured portion enlarges, and that you can pass an instrument of a larger and a larger size, until, continuing to do so, the urethra is capable of receiving a full-sized bougie. And here you will naturally ask, what is the full size of an instrument of this description? I do not know whether this [pointing to the cast already mentioned] is considered a full-sized catheter or not, but I suppose it is. The largest point of the urethra, as you will see by this specimen, is perhaps a little less than the end of my little finger; and I believe we may say in round numbers, that a full-sized urethra—a urethra of the natural size—will admit a bougie or metallic instrument which is about a third of an inch in diameter.

I may observe to you, that it is not necessary in all cases to go on enlarging the instruments until you can introduce one of the size I have now shown. A patient may be able to void his urine with perfect ease—he may be subject to nothing that can be called disease of the urethra—although the canal will not admit an instrument so large as this. Some surgeons, with respect to the use of bougies in stricture of the urethra, seem to proceed upon a supposition that it is necessary and advantageous to introduce the largest instrument that can be made to pass, to let it remain as long, and to repeat it as often as possible. I consider that these three notions are quite wrong. It would be almost safer to act on notions totally the reverse. In the treatment of this complaint you must not fix your attention exclusively on the mere circumstances of stricture and narrowing of the canal, and on the idea of enlarging it by the mechanical

use of instruments. You must recollect that inflammation has been the cause of the disease, and that a continuance of inflammation will maintain, or will aggravate the induration and thickening on which the disease essentially depends; therefore, the primary indication in the treatment of stricture is to remove inflammation. You must recollect that the use of instruments, and the application of caustic, are themselves capable of exciting inflammation in a healthy urethra, and consequently that they are very capable of aggravating inflammation in a urethra already inflamed—capable of increasing the stricture and inducing retention of urine. You must, therefore, in all these cases, proceed gently in the means you adopt. Introduce instruments gently; do not forcibly enlarge the stricture, nor repeat the passage of the instrument more than once in three or four days generally; and in cases of an aggravated kind, where the stricture is considerable—where it has already lasted for a long time—where you find that, by using instruments of a larger size, you only produce inflammation and aggravate the symptoms, without enlarging the dimensions of the canal—if the patient be able to pass the urine with tolerable facility—if he do not suffer any material inconvenience—leave the urethra quiet, and do not irritate it by the introduction of instruments at all. You will find it better to abstain, in such a case, from all such sources of mechanical irritation, than to persist in attempts at enlarging the urethra, which you really cannot accomplish. I attended, for several years, an elderly gentleman who had been the subject of stricture for a great length of time—so long, indeed, that originally he had been a patient of Mr. Bromfield, a surgeon of St. George's Hospital, who flourished two or three generations ago. This patient could only admit an instrument of very small size. In consequence of living not a very regular life, he experienced considerable suffering from a state approaching to retention of urine, which I occasionally relieved as well as I could. I was anxious to enlarge the stricture, that he might not continue to suffer from it, and I made frequent attempts to do this by the introduction of instruments, but I always found that these increased the difficulty of passing his urine. He was himself anxious to have his urethra enlarged in size, and thus I went on for a long time trying to accomplish the object. It happened, however, on one occasion when he had suffered considerably, and a retention of urine was almost induced, that it was necessary to leave off the use of instruments for some time, and on calling on him again, I found him better; I then told him he had better not have the instrument on that occasion in-

troduced, for I thought it would be better to wait a little; he did so, and on calling again to see him, I found him so much better that I was led to leave off the use of instruments altogether. For the last two or three years of this gentleman's life, therefore, I did not introduce any instrument at all, and he was during that time much better than when he was in the habit of having them introduced frequently. There are several cases of this kind, that is, of long-established disease of the urethra, in which it is best for a patient, if he have the power of voiding his urine with tolerable facility, to be contented with his lot, and not to have the parts irritated by the employment of the means I have mentioned.

It is necessary for you to be on your guard in the use of instruments of a small size, whether they be bougies or metallic instruments, for the points of such instruments may pass into the openings of the mucous lacunæ of the urethra, or become entangled in the soft surface of the mucous membrane, and thus you may be led to suppose that stricture exists where there is no morbid condition of the urethra whatever. Thus it frequently happens too that a small instrument will not pass into the urethra, though you can introduce one of a greater size, and it has happened to me several times to meet with patients who have been under great alarm, from having, as they supposed, the worst possible stricture, stating that the smallest instrument would not pass into the bladder, while I have found an instrument of full size pass at once with perfect ease.

#### LECTURE LXXVII.

STRICTURE OF THE URETHRA continued.—  
*Armed Bougies, and other Instruments.—*  
*Retention of Urine.—Fistula in Perineo.—*  
*Extravasation of Urine.*

AFTER stricture of the urethra has been relieved by the means which I described to you in the last lecture—after the dimensions of the canal of the urethra have been gradually enlarged or restored to their natural state by the treatment I then pointed out—we frequently find that the patient, having remained for a considerable time quite well, experiences a relapse of the complaint; that the contraction of the canal slowly returns, and we are obliged to have recourse to the same treatment again; hence it is expedient, in certain cases, to introduce an instrument from time to time, once in two or three months, in order to prevent the contraction of the stricture, to which there is a great tendency in such cases. Although we have removed the stricture at the time,



we cannot venture to tell the patient that he is completely and effectually cured, because we find that the disease often recurs.

In bad cases of stricture, the treatment I mentioned to you in the last lecture very often produces little effect. A long period is required to overcome the contraction, to restore the urethra to such a size as will enable the patient to evacuate his urine with comfort; and hence surgeons have been anxious to discover some means for more speedily, effectually, and radically, relieving patients who labour under stricture of the urethra. They have considered that the cure produced by the employment of bougies, sounds, or the instruments I described to you in my last lecture, is effected by dilatation; therefore, they have an idea that, when the dilating means are no longer employed, the contraction is likely to recur; hence they have supposed, that, if means could be used by which the constricted part might be destroyed—not simply dilated, but entirely destroyed—the cure would be more effectual and permanent, that we could more safely depend on a complete relief from the symptoms. The plan of employing caustic for this purpose was introduced long ago. Wiseman speaks of this application. Hunter endeavoured to employ it in strictures of the urethra; and he states that he applied lunar caustic to the contracted part by means of an instrument like a portcrayon. Sir E. Home, the brother-in-law of Mr. Hunter, adopting this idea, endeavoured to accomplish the purpose in another way; that is, he included a piece of the nitrate of silver in the end of the common plaster bougie, which, as I have before mentioned, is made of cloth impregnated with a certain composition, cut out into pieces of a flat shape, and afterwards rendered round by being rolled up; now, instead of closing the end of the instrument, a piece of caustic was inserted into the extremity of the plaster bougie, which was afterwards closed around it. The mode in which those armed bougies, as they are termed, are employed, is this: a bougie of good size—a simple one—is introduced down to the stricture (and Sir E. Home seems in general to be favourable to the employment of a bougie of full size); then having measured, by making a mark with the nail on the bougie at the orifice of the urethra, the exact situation at which the constricted part is found, a caustic bougie of the same size as that which has been previously employed, is carried down to the stricture, and held there for a certain time, so that the end with the caustic may be applied to the contracted part of the urethra. This mode of treatment is directed to be persisted in until the contracted part to which the caustic has been applied shall be removed—until, by repeated applications of the escharotic, the contraction shall have

been burnt away, so that the bougie may go on further; and, if another obstruction be found, the same application is to be used there, until the bougie shall gain a passage into the bladder. This is the general mode of using an armed bougie, recommended by Sir E. Home. He describes this mode of treatment as very effectual; as destroying the contracted portion of the urethra—so that a full-sized bougie will pass into the bladder within a short time,—and as being applicable to almost all cases; so that, according to his description, the general treatment of stricture would consist in the application of caustic to the constricted part in the way I have mentioned to you; and, if we are to credit the description which he gives, nothing can be more safe or effectual than this mode of treatment. When we come, however, to peruse the cases which he gives in illustration of the various points of the treatment, we find that serious mischief is sometimes produced by this mode of treating stricture; and, as he is very partial to the plan, we may, at all events, suppose that he has not exaggerated the ill effects of the treatment; yet taking them as he has given them, we find that this mode of applying caustic frequently produces profuse hæmorrhage—alarming to the patient—and I think we may also say dangerous, for it is very profuse, and is repeated every time the application is made; so that if the surgeon be tolerably resolute, and is determined to burn on according to the plan recommended, the patient may lose a very considerable quantity of blood indeed. False passages are also occasionally made; that is, instead of burning through the stricture, perhaps a hole is burned through one side of the urethra. Inflammation of the urethra, or of the cellular substance surrounding it externally, abscess and fistula in perineo, increased difficulty of making water, aggravated to retention of urine, serious constitutional disturbance, amounting to considerable fever, and in many cases taking the form of intermittent fever or ague; these are some of the symptoms, and some of the effects which, according to the cases brought forward by Sir E. Home, the great patron of this mode of treatment, are frequently produced by the application of caustic in the way I have described.

The dangerous nature of this treatment led a surgeon, named Whately, to employ another plan of treating strictures by caustic. He made a small opening with a pin in the end of a plaster bougie, and introduced into that opening a small portion of the kali purum, or potassa fusa. The potass being enclosed in a piece of paper, and broken, he took one of the minute fragments and introduced it into the opening which had thus been made, covering the end of the opening in the bougie afterwards with a piece of com-

mon cerate, and then carried it down to the stricture, moving it backwards and forwards against it. Now Mr. Whately seems to have been as cautious in the employment of this substance as Sir E. Home was bold in his use of the lunar caustic, for he recommends you to take a fragment of potassa fusa not larger than the eighteenth part of a grain, and he says he never used a portion larger than the twelfth part of a grain. Now I should suppose that if a fragment of this kind be put into the aperture of a bougie, and if that aperture be filled up afterwards with cerate, it would make very little difference whether the fragment of the potassa was inserted into the one or into the other end of the bougie. We know that an alkali and any fatty or oily substance brought into contact, form soap—so that this plan has been called by some *soaping* the urethra. I should conceive, according to the description Mr. Whately has given of it, that it is just capable of doing that good which the simple introduction of a plain bougie can effect; but I cannot think it has any power whatever as an escharotic. However, if it were a good plan, you would employ the potassa fusa more freely than he has recommended; it is certainly a more cautious way than using the armed bougie, in which a large piece of the nitrate of silver is carried into the urethra. A French writer has lately devised an instrument by means of which the lunar caustic in substance is applied to the interior part of the stricture. His instrument is well constructed, and may perhaps deserve a trial in those cases in which it may be deemed fit to employ caustic.

From the various results which attend the free employment of caustic in the urethra, I think that we may safely say, it is a mode of treatment not applicable to bad cases of stricture; that is, cases where the change of structure is considerable, and the contraction is very extensive; and in cases not so serious, we know that the application of caustic is not necessary: for the simple bougie—sound—or silver catheter, will accomplish the object we have in view. The use of caustic has, in general, been very little favoured on the continent; they have generally treated strictures there without it, and have been averse to it, from knowing its ill effects; it has been partially employed in this country, but never got into very great use, and, I believe, has been generally less and less used, so that at present it is but seldom adopted in the treatment of stricture in the urethra.

When the urethra has been diseased for a considerable length of time, and no treatment has been employed to prevent the progress of disease, more especially when persons have lived freely and indulged in drinking, we often find that the mucous membrane of the urethra becomes greatly altered, and

the structure much thickened and hardened, so that it constitutes a firm cartilaginous ring, totally different in appearance from the natural textures of the part. Frequently, a certain length of the urethra is altered in this way, so that you have a contracted portion measuring perhaps half an inch, three quarters of an inch, or an inch in length; at the same time, the dimensions of the affected part become considerably reduced. The difficulty in evacuating the urine becomes more and more considerable; the stream, which at first is rendered small, becomes extremely minute, and perhaps the patient can no longer void his urine in a stream at all, but passes it simply by drops, and with considerable straining and effort. The dimensions of the diseased part of the urethra are so reduced, that a slight aggravation of the mischief converts the difficulty of making water into absolute retention of urine, and brings the patient from a state of great suffering and pain only, into one of very considerable danger. The bladder is not effectually emptied under such circumstances; some portion of the urine always remains behind. The constant presence of urine in the bladder produces inflammation of the mucous lining, and excitement of the muscular coat of the viscus, with increased efforts to expel its contents: it produces repeated and urgent attempts to expel the urine, the continued presence of which causes constant pain and uneasiness of the bladder and neighbouring parts, and in this way the bladder becomes very considerably changed in structure, the mucous membrane is inflamed and thickened, and the muscular coat which covers it also becomes very much thickened; so much so, that you would hardly recognise it as being the muscular coat of the bladder, which, in the natural state, as you know, forms a very thin expanded stratum of fibres, between which the mucous lining is visible. In some of these diseased bladders you find a thickness of the muscular coat nearly equal to that of the gluteus maximus. Here [exhibiting a preparation] is a specimen of diseased bladder, in which the muscular coat is nearly equal in thickness to my fore-finger; a thickening consequent on stricture of the urethra. Here are other specimens showing the same fact. The thick muscular fibrous substance of the bladder, in this condition, is really not at all like the thin muscular fibres of the natural healthy organ.

When the bladder is thus inflamed on its internal surface, and thickened in its muscular coat, it frequently happens that incontinence of urine takes place; a state which appears, at first view, to be just opposite to that which you would expect to find in stricture of the urethra. The narrowing of the canal in stricture of the urethra, of course, primarily produces an impediment to the

passage of the urine from the bladder, but in this particular case, when the stricture has lasted for a long time, and has become of itself very considerable, incontinence of urine takes place. The manner in which this condition arises is this:—the forcible contraction of the thickened bladder expels the water in small quantities into the urethra, the resistance of the neck of the bladder being no longer able to counterbalance the contractions of the thickened muscular coat; and the urethra is thus kept full, up to the point at which the stricture is. In the natural state, of course, there is no water in the urethra, because the contraction of the sphincter vesicæ counterbalances that of the muscular coat, and retains the urine in the bladder till a voluntary attempt is made to force it out; but the involuntary and violent contractions of those parts thus changed overcome the strength of the sphincter vesicæ, force out the water, and fill the urethra, and as the latter is thus kept filled behind the stricture, a certain quantity is continually passing through the contracted part, impelled by the action of the respiratory and abdominal muscles, as well as by the continued action of the distended bladder, and thus it is that incontinence of urine takes place in these cases. Again, the irritation which is kept up in the urethra, by the distention of the canal, and by the forcible attempts made to urge the water forward from behind the stricture, produces inflammation in that part of the canal, and this goes on to the formation of abscess, which bursts externally; and through that opening not only matter but urine escapes, and this last prevents the closure of the aperture again, constituting what is called *fistula in perineo*.

The preternatural opening thus produced relieves the patient for a time; it allows a more ready escape for the urine—it takes off the pressure from the posterior part of the urethra, and thus relieves the patient from the more urgent symptoms;—however, as the stricture of the urethra continues, and as the fistula contracts, the difficulty and inconvenience are renewed; other abscesses take place, and repeated fistulæ are formed. In this way, patients with bad strictures of the urethra often have successive inflammations, producing general condensation and thickening of the cellular texture of the perineum and about the scrotum, and the perforation of the thickened membrane, with numerous fistulous openings through which the urine is more or less completely discharged; and thus the individual is ultimately reduced to a very miserable condition. The repeated evacuations of the urine which occur through the scrotum, the inflammation which is produced, the abscesses which form, the urgent desire to void the urine—all

these circumstances together, bring the patient into a state which renders his life perfectly burdensome.

It is, of course, very desirable to find out some means effectually to relieve a person from such a wretched state, and various measures have been proposed for this purpose. In such instances it is sometimes impossible to introduce any instrument into the bladder; we may perhaps be able to succeed in getting a very small instrument in—but if we do, we find it gives but little relief; and if we persevere in the cure of those cases, by the introduction of the common bougie, we find that the proceeding is very tedious, and we make way but very slowly in removing the disease of the urethra. It has been proposed, therefore, in those cases, to introduce an instrument by main force, through the contracted part of the urethra; and the instrument employed for this purpose is a conical sharp-pointed silver catheter, which is called by the French *sonde conique*. It is made thick at one end, so that it may be strong, and it is brought to a tolerably sharp point at the other. You are directed to pass this down to the stricture, and then to carry it down steadily, in the direction of the axis of the canal, in spite of any obstruction you may meet with. Now it is very easy to direct you to carry an instrument of this kind in the axis of the canal of the urethra, but it is by no means so easy to do it. A variation of the twentieth part of an inch will make the difference between its going along the line of the canal of the urethra, and out through the side of it altogether; therefore it is impossible for any one, however accurate his knowledge of the anatomy of the part may be, to introduce an instrument of this kind, and to thrust it forwards, so as to be certain that he will not puncture the side of the canal. It is, in fact, completely a blind thrust. If you carry it directly through the urethra, and into the bladder, it is lucky for the patient, but the chances are much more in favour of your pushing it through the side of the urethra, and carrying it on through a new passage, if it is got into the bladder at all. The sharp point of this instrument will enable you certainly to carry it into the bladder in some way or other; you may carry it through the side of the urethra, and then into the bladder. It is then said, that having carried it into the bladder, you must leave it there; and that, after being there a few days, it will get loose, when you may take it out, and gradually increase the size of the instrument. Now it must be very apparent to you that this is a coarse, rude, painful, and unscientific proceeding. You will not be surprised at hearing that it has often produced aggravation of the symptoms—that it has brought on seri-



ous inflammation—that it has caused suppuration in the parts which have been the subject of such violence—and that, in fact, in the already reduced and exhausted state to which patients are brought by the existence of so serious a disease, the aggravation of the mischief by using an instrument of this kind has proved fatal. I say there are no cases of bad stricture, under urgent circumstances, in which you might not carry an instrument with some degree of force into the bladder; but then I should use a catheter of small size; and in a case where you know the details—the local details, if I may use the expression—where you have already seen the patient, and have been in the habit of introducing a catheter, you may introduce a small one in this way, carrying it pretty much by main force into the bladder. There are cases in which such a thing may be done, although it is difficult to describe in a general way where it should be done, and where it should not. When I speak to you in terms of reprobation of forcing an instrument into the bladder, I speak of the general plan of treatment, and, as a general plan of treatment, I consider it objectionable, although you may use a certain degree of force in some cases, when you are quite confident that you are carrying the instrument in the proper direction, and that you are using that force with safety to the patient.

The application of caustic has been considered a proper mode of treatment in those bad cases of stricture; but the various reasons I have already enumerated make it a very undesirable mode of proceeding in cases of this kind. Inflammation is the great cause of mischief in those instances, and unquestionably you run a great risk of aggravating inflammation, and of increasing the sufferings of the patient, by the application of caustic. I do not consider it an advantageous mode of proceeding; on the contrary, I think there is great risk, by its use, of aggravating the mischief which already exists. Another mode of proceeding has been that of making an incision in the perineum, and cutting down upon the contracted part of the canal; having previously introduced an instrument from the orifice of the urethra down to the situation of the stricture, taking that as a guide, cutting down upon it through the integuments and soft parts in the perineum; and, having found its extremity, carrying a fine probe through the stricture, dividing the thickened part, and passing the instrument forwards into the bladder. This is a very difficult and very uncertain piece of dissection. You are cutting through parts which are thickened and indurated, and which, therefore, are exceedingly changed in their condition and relative position, in consequence of disease; you are cutting, therefore, almost completely

in the dark, at a considerable depth from the surface; and in consequence of that circumstance, and of the blood which is poured out during the operation, you can see but very indifferently what you are about, and in some cases it has been found that the parts have been cut very differently from what was intended; even the bladder and other parts having been wounded, and more cutting produced than would be necessary for the performance of the lateral operation for the stone. The result of these operations has been very unfavourable and fatal, so that, considering the whole, I cannot regard this as a desirable mode of proceeding generally.

Another method has been proposed by Mr. Stafford, a gentleman who was house-surgeon at this hospital. When I say proposed, I should rather say revived, for it is a plan which was in existence before—it is the plan of introducing down to the stricture a catheter which shall convey in its cavity a lancet, capable of being protruded from the end of the instrument. Supposing, therefore, in a case of stricture, that the canal is so small and so hard that no instrument whatever can be introduced into it, the mode of proceeding adopted by Mr. Stafford in such a case would be, to employ an instrument such as I now show you, consisting of an ordinary catheter, split at the end, and containing in its interior a lancet, which can be propelled forwards by a spiral wire spring, connected with the other end of the instrument. I believe there is a screw by which you can regulate with proper precaution the distance to which the lancet may be projected, so that you can send it out an eighth, a quarter, or three-quarters of an inch, and so on. You will observe that by pressing down this spring the lancet projects through the slit in the catheter, and, of course, when it is thrust out in this way, it will cut through the whole of the substance with which it comes in contact; then you draw back the lancet, and if a sufficient opening is made, an instrument will pass through it; or you may repeat this process from time to time till you have cut through it to an extent allowing the catheter to pass along. In cases where the stricture is very bad, and the canal very small, where such an instrument can hardly be introduced, Mr. Stafford employs another mode of proceeding: he has a very small canula, like a sort of small catheter, with an opening at the end; through this canula he introduces a wire, so that the wire will pass through the stricture; then, having withdrawn the canula, which has been passed into the urethra, and served to conduct the wire to the stricture, he carries over the wire which has been thus introduced one of his instruments containing a lancet, which is, in fact, divided into two parts, so that, when it is thrust out, it cuts on each

side of the wire which has previously been introduced into the stricture; the wire, therefore, forms a kind of guide, by which the lancet is carried directly into the stricture. It appears to me that this mode of proceeding, when cautiously adopted, is safer with respect to the patient than either of the methods I have just described, and that, in many instances, it will be effectual in making an opening through a contracted portion of urethra. I have not seen these instruments frequently employed myself, but I have seen them used in some cases, and I have not seen any harm whatever result from their employment; while, in one case particularly, which I had the opportunity of seeing with Mr. Stafford, after the repeated introduction of an instrument of this kind, and by means of its employment, a full-sized catheter was ultimately passed into the bladder. I was present when this was done; it was introduced into the bladder of a gentleman who had not had an instrument beyond the smallest size passed through the stricture for many years before, and who had been labouring all that time under the pain and difficulty attending a stricture of that sort; and at the time the instrument was used, had been voiding his urine by drops, and with great difficulty, for a long time previously. The introduction of the instrument immediately liberated him of about three pints of strongly ammoniacal and highly offensive urine, and ever afterwards a large instrument could be introduced. I should conceive, therefore, that this plan of Mr. Stafford is one well deserving a trial in these bad cases of stricture of the urethra.

In the case of stricture of the urethra, where the contraction is considerable, I have mentioned to you that the introduction of instruments may easily bring on complete retention of urine; that the accession of inflammation, produced by any external cause of irritation, such as the use of instruments or caustic; or by any internal cause, such as imprudence in diet, excess in drinking, and so forth, is capable of converting the difficulty of making water into actual retention, and the patient finds that he cannot void his urine at all. It has been commonly said, that the retention of urine in these cases arises either from inflammation of the urethra, or from spasm affecting the strictured part; but I confess I am unable to point out the difference between those two states, and, in fact, I believe there is no difference between them; still less can I see the propriety of a threefold division of those cases—retention from stricture, retention from inflammation, and retention from spasm. In fact, inflammation is the essential condition, for it produces a narrowing of the urethra; and an accession of inflammation in an already strictured portion of the canal produces actual retention of urine. The idea

of spasm in those cases may have arisen from the notion which some entertain respecting the muscularity of the urethra. I am not aware that the canal of the urethra, generally speaking, is muscular; it seems to me to be altogether different from a muscular organ. There is a certain portion of it which has muscular fibres placed exterior to, and surrounding it, on the outside; but the rest of the canal, as it seems to me, does not possess muscular structure. Again, the administration of opium sometimes relieves retention of urine, and opium being deemed an antispasmodic, it may have been supposed that this state arises from spasm in the canal.

When retention of urine comes on, the local pain and the whole of the symptoms are aggravated; a high degree of constitutional disturbance arises, for you have complete obstruction of that excretion which takes place through the medium of the urinary organs. When a complete retention of urine is produced, it seems to influence in some measure the secretion of the urine. The secretion goes on at first certainly with freedom; but the difficulty of the excretion appears soon to produce defect in the secretion, and you all know that that will have a most important influence on the animal economy: I need not mention that it must have the most important influence on the system generally. The urine is confined, and accumulates in the bladder, which it distends; it causes a firm swelling in the lower and anterior part of the abdomen; you find a hard tumor circumscribed and rising from the pubes; this tumor rises higher and higher up in the abdomen as the accumulation goes on, reaching to the navel and higher; pressure on it produces more or less pain, in general according to its extent. In this state the patient experiences repeated and most painful efforts to make water—there is a constant desire to liberate the bladder from the urine which accumulates in it; involuntary efforts are made for that purpose, with great aggravation of the patient's sufferings. In considering, therefore, that the symptoms under which the patient labours arise from retention of urine, you must direct your careful attention to the consideration of the bladder. If the patient does not make water, that does not show of itself that there is retention of urine; a person may not make water in consequence of no water being secreted; there may be suppression of urine—that is, there may be a deficiency in the action of the kidneys, there may be *ischuria renalis*; but retention of the urine is mainly indicated by the distended state of the bladder, and that is a symptom necessary to enable you to determine that retention of urine exists. The retention may be total, or it may be partial. When we say that a patient has

retention of urine, we do not mean to imply by that expression that no urine whatever escapes from the urethra; on the contrary, incontinence of urine, as I have mentioned to you, is one of the symptoms attending retention; and in the same way there may be a partial escape of urine through the urethra of a person who has retention of urine. The mere circumstance, therefore, of urine coming away involuntarily, must not deceive you in such a case; you must examine the state of the abdomen, to see whether that tumor, which will be the consequence of the distended bladder, exists in the hypogastric region.

The treatment in those cases, where the cause of the symptoms is inflammation, should of course be antiphlogistic. You must take blood either from the arm, if the condition of the patient admits of it, or by the application of numerous leeches to the perineum, or region of the bladder. Let the patient go into the warm bath, or the hip bath, or apply fomentations, or sponge the perineum or lower part of the abdomen with warm water; give active aperients which will operate quickly, such as calomel, jalap, or castor oil, or the ordinary purging mixture; follow this up afterwards with the free exhibition of antimonials—the tartarate of antimony. In many cases, after bleeding, the use of active purgatives and of the warm bath, effective and speedy relief will be experienced by the administration of opium, in large doses; give a draught, containing a drachm of tinctura opii, in the evening, and about two hours afterwards repeat the dose. In these cases the late Mr. Cline recommended, and was in the habit of employing, the tinctura ferri muriatis, giving ten or fifteen drops of it, and repeating the dose every ten or fifteen minutes. I believe general experience has not led others to place any very great confidence in the use of this remedy; I have seen it administered, however, in certain cases, where the evacuation of the urine by the natural course has come on afterwards; but I have not, I think, in general seen it employed alone, so that I can hardly say that, in any case, I think the influence of that particular remedy has been the means of relieving the patient. The antiphlogistic treatment, therefore, and that of an active kind, and then the exhibition of opium pretty largely, will be generally the most effective plan.

Now when a patient has retention of urine, the idea naturally arises in his mind that the surgeon ought to draw off his water; he expects that the catheter shall be introduced, and is rather disappointed if the surgeon cannot do this and liberate him from the inconvenience which he suffers; but as inflammation is the cause of the mischief in these cases, you would hardly suppose that

the introduction of an instrument would be likely, as a general means, to be very advantageous; indeed, it is very capable of aggravating the mischief which exists; therefore, in instances of this kind, where the retention depends on inflammation in the urethra, it is desirable to do all we can to overcome that inflammation, before we attempt the introduction of an instrument, and to endeavour to relieve the patient, if we can, without the introduction of an instrument at all. If, however, the employment of the means I have mentioned to you should not be productive of relief, we should then employ an instrument—a small bougie may be introduced, and if it can be passed through the stricture, it may be allowed to remain for a short time, and then withdrawn; or a fine elastic catheter, with a stilette, may be introduced for the same purpose—and it is not necessary to pass it into the bladder, for if you pass it beyond where the stricture is, the patient will be relieved; or a small silver catheter may be used for the same purpose, and, being of a harder substance, will enable you more easily to pass the stricture, though you must take care that you do it with a safe degree of force. If you introduce such an instrument into the bladder, and let off the urine that has accumulated, the question will occur, whether you should leave it there or withdraw it, and introduce it again if the difficulty of passing the urine recurs. Now if the presence of the instruments does not excite pain and uneasiness, and if you have introduced an elastic catheter, it is well to leave it in its situation, confining it to the extremity of the penis, and by putting a plug into it, the patient can draw off the water as it accumulates; but if, as frequently happens, the instrument produces great pain and uneasiness, it will be necessary to take it out, and to trust to your power of reintroducing it when necessary. If you are able to leave it in the bladder without uneasiness, it will commonly be quite unnecessary to leave it longer than 48 hours, for you will then be able to take it out and to introduce a catheter of full size, and the patient is completely relieved from the disease.

Supposing you should not be able to introduce an instrument of any kind into the bladder, after the treatment you have adopted for the relief of the patient labouring under symptoms of retention of urine, what course then would you adopt? In such a case, the patron of the conical-pointed sound, to which I have already alluded, recommends the introduction—the forcible introduction—of it into the bladder, against which all the objections I have before mentioned as applying to it may be made. If this be not done, the only other measure consists in puncturing the bladder, by which you get rid at once and completely of the cause of the mischief; you relieve the stricture from



the pressure of the urine against it, you remove the accumulation from the bladder, and, by leaving a canula in the opening which you have made, you provide a remedy against any recurrence of the evil; you have the power of relieving the patient when you like; you have the advantage in this proceeding of emptying the bladder without any irritation to the urethra; you completely take away from the urethra any source of irritation or inflammation, and leave the canal in that quiet state in which it will recover its natural condition; and you find, in a short time afterwards, that you may introduce, if necessary, an instrument of sufficient size for all the requisite purposes; the pressure against the strictured part of the urethra is removed, the inflammation in the canal subsides, and the canal recovers, to a certain degree, its natural dimensions. You place the canal, therefore, in the state most favourable for recovery by the operation of puncturing the bladder; but if you force an instrument through the stricture, and leave it there, you of course keep up the irritation in the urethra; in fact, you add to it a fresh source of irritation by the presence of a foreign body; and, comparing the two measures together—that of forcing an instrument through the urethra with that of puncturing the bladder—I consider the latter to be decidedly the more advantageous.

Puncture of the bladder may be effected in different situations. You may make an opening into the bladder above the pubes. When the bladder is distended it rises above the pubes, elevating the peritoneum, and separating it from the anterior surface of the organ and the abdominal muscles; so that behind those muscles, instead of having a peritoneal covering, you have the anterior surface of the bladder itself confined merely by cellular membrane, and you may, therefore, plunge a trochar into the hard swollen substance which you feel just above the pubes, and thus let off the accumulated urine. Supposing the bladder should have risen as high as the navel, you may introduce the trochar midway between the navel and pubes; but if it has not risen so high as that, you would introduce it lower down. You should not introduce it as you introduce a trochar in the operation of paracentesis abdominis, directly backwards, but you should direct the point of the trochar downwards, so as to accommodate it to the situation of the bladder. In ordinary circumstances the common trochar which is used for tapping will do for puncturing the bladder above the pubes; but if you were to operate on a very fat subject, you would not find it long enough; you would find it necessary to make a previous incision through the integuments and adipose substance, so that afterwards you would only have to puncture through the

abdominal muscles and bladder, therefore a longer canula is required. You would employ such an instrument as is used in puncturing the abdomen, then withdraw the stilette, and passing an elastic catheter through the canula, leave it in the bladder, so as to allow you to draw the urine off should it again accumulate: the end of the catheter is to be fastened by a tape passed round the body, and stopped with a plug, which is to be taken out when you wish to let off the water. It is a very easy proceeding when performed in this way; I have done it several times, and I never saw any ill effects result from the mere puncturing of the bladder. Another mode of proceeding in puncturing the bladder is from the rectum; the under surface of the bladder rests on the rectum: you introduce your finger into the gut, and feel a large tumor pressing downwards upon it,—you may be satisfied that it is the bladder, and if you use a curved trochar and puncture the middle of the tumor with it, you evacuate its contents. You guide the point of the trochar between the two fingers of the left hand directly into the rectum, carry it upwards and forwards, that is, in the axis of the bladder, and you cannot fail to make a puncture into the organ, and to evacuate its contents in that way. I have never seen the plan of puncturing the bladder from the rectum adopted, and therefore in mentioning it to you I may add, that it is said the canula may be withdrawn, and the patient will void his water himself through the opening thus made. I only mention it from what is stated; I cannot speak of it from my own knowledge. Of course it would be inconvenient to leave a canula permanently in the anus, which you would have to do if you were to follow the plan that is adopted in puncturing the bladder above the pubes; it is said, however, that it is not necessary to do that where the bladder has been punctured through the rectum.

The bladder has also been punctured through the perineum, in which case the puncture is made in the situation of the lateral operation of lithotomy. After cutting through the integuments and adipose substance, a trochar may be passed upwards and forwards, so as to perforate the bladder about its neck; or after cutting into the perineum, you may make an opening into the membranous portion of the urethra behind the bulb, where it is distended; and in other cases you may force an opening into some other part. It appears to me that the opening above the pubes into the bladder is the simplest and most convenient. If the prostate gland were enlarged, you could not puncture through the rectum, for it would prevent your getting into the bladder in the direction you wished.

It sometimes happens before effective means have been taken to relieve the patient

from retention of urine, either by introducing an instrument through the urethra, or by puncturing the bladder, that the bladder becomes evacuated in another way, that is, the urethra ulcerates behind the stricture, or sloughs, so that the urine escapes through the opening thus made into the cellular membrane surrounding the canal; the urine, in fact, becomes extravasated, and when it passes in this way out of the urethra into the cellular membrane, the continued and repeated urgent efforts of the inflamed bladder to rid itself of its contents, forcibly inject the fluid into the cellular membrane, and propel it from one part to another, until at last it is carried through the cellular membrane to a very considerable distance from the seat of its original admission. In the first place, the cellular membrane about the anus, scrotum, and penis, becomes filled with urine, and enormous swelling of those parts is the consequence; the urine then passes into the cellular membrane of the lower part of the abdomen, of the inside of the thighs and groins, and the irritating fluid thus injected into the cellular membrane in this extensive way, produces a high degree of inflammation, attended with suppuration and mortification of that structure; and when suppuration and mortification of the cellular texture are produced to a considerable extent, mortification of the integuments covering it necessarily follows. This local mischief is attended by a high degree of inflammatory febrile disturbance, and the patient is brought into a state of the most serious danger; in fact, the constitutional disturbance produced by this extensive inflammation of the cellular texture, quickly brings the patient into the greatest danger.

All that we can do in these cases is to give a speedy and effective exit to the urine; to cut down through the integuments and cellular membrane in the perineum to the part at which the urethra has given way, and thus to allow of a ready and direct exit for the urine; also to make incisions in other situations to which the extravasation of the urine has extended, so as to allow the escape of the fluid from the different parts where it has been injected, into that membrane, and at the same time to allow of the ready escape of the matter, and of the sloughs of the cellular membrane. The ordinary situation of stricture being in the membranous part of the urethra, you would in the first instance, unless there should be any particular circumstance prohibiting it, cut down through the perineum, in the situation in which you would cut for the lateral operation in lithotomy, and cut as nearly as possible into the membranous part of the urethra: this allows the urine to escape, and affords a ready and free exit for any that may afterwards be secreted. But the mere making of such an opening is not sufficient, for in bad cases the

scrotum, penis, inside of the thighs, the groins, and the cellular membrane of the abdomen, become externally injected with the urine; it is necessary, therefore, in these cases, to make further incisions, to let out the urine which has gained admission into those parts. Very great relief is produced when the urine is thus evacuated, and the patient, from a situation of the most urgent danger, becomes in fact so relieved that you hardly think he is in any danger at all. Extensive mortification of the cellular membrane, and of the integuments, often, however, occurs, for all those portions with which the urine comes in contact perish; you have large sloughing taking place in the scrotum and penis, and the testicles are often completely denuded, but still, if the patient is effectually relieved, you find that this extensive destruction is repaired, and that the patient recovers after passing through a state which you would suppose necessarily to be fatal. I do not know any more remarkable recoveries, from apparently desperate situations, than those which we sometimes see take place under circumstances such as I have now mentioned to you.

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## OBSERVATIONS

ON

## FUNGUS HÆMATODES OF THE EYE.

BY RICHARD MIDDLEMORE,

Assistant-Surgeon to the Birmingham Eye Infirmary.

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IN the course of the observations I have to offer on fungus hæmatodes of the eye, it is not my intention to make any further allusion to the disease as it occurs in other parts, than may be requisite for the purposes of illustration and comparison.

I am well aware that it is by no means unusual for a variety of textures to be involved in this disease, as though the peculiar condition of constitution inducing its formation in one situation were replete with its essence; whilst on other occasions its action is limited, and death may take place from the irritation and constitutional disturbance produced by its agency in one part alone. How far it is proper to consider as invariably constitutional a disease which frequently confines itself to a circumscribed sphere of action, and occasions no general alteration of structure or participation of its action, I leave others to decide: to me it appears by no means improbable that a peculiar

change in the action of a part, at first confined to one point, may from a simple local affection become an extensive and fatal one, by its propagation to other structures; and, by involving important organs, and contaminating the constitution at large, induce that altered and malignant condition of parts which is then, strictly speaking, an incurable constitutional disease.

Nor is this merely a matter of conjecture; carcinoma of various parts has been so frequently removed with advantage by surgeons, whose opinions respecting the nature of the disease must be relied on, that there cannot exist any justifiable reason to dispute the fact; and at the present day, operations are commonly resorted to by the ablest surgeons for the same purpose, which is conclusive as to their opinion of the local nature of the disease at its onset: if, then, one disease, termed malignant, which in its unmo- lested progress bears so close a resemblance to others of the same kind, be proved to be local at its commencement, and in some instances be removed at an early period so successfully, that it shall neither disturb the health, appear in any other situation, nor at all affect the constitution afterwards, are we not warranted in assuming the probability of the same favourable result in reference to other diseases, if timely and effectually removed?

In some constitutions there would appear to be a great insusceptibility to general participation in local mischief, and in such subjects the removal of a part, extensively, and for a long period affected with a malignant disease, may still present a means of security; but, on the contrary, in other instances the reverse of this condition exists, and a simple local action is rapidly carried into the constitution, and in such cases the removal of a diseased part, as soon as it appears, affords the only chance of immunity from a general affection.

We find that the eye has been successfully extirpated when affected with fungus hæmatodes, sufficiently often to justify the practice even at an advanced stage of the disease, when the risk of constitutional contamination must have been great; can we therefore refuse to operate, or withhold our belief of the propriety of effecting so judicious an object at an early period, when the chances of success are greatly increased?

or can we conscientiously allow a disease, which, if left to itself, will be certainly fatal, to be progressively advancing, content to remain the passive spectators of torment so exquisite, and destruction so inevitable, as its continued existence implies, without adopting a mode of practice, which, if it do not cure, cannot fail to alleviate?

In our present state of knowledge, it is impossible to demonstrate that process by which the action of any disease, properly called local at its origin, is influenced by certain vices, disturbances, or peculiarities of the constitution; but of this every observer is convinced, that many local diseases assume a malignant character from a depraved condition of the general health, and re-assume a mild and curable appearance on the rectification of that disordered state; but it is always right to consider the whole series of phenomena connected with this most important question, and not narrow our views by looking only to one circumstance in a chain of events, so infinitely varied and numerous as those produced by the agency of vital operations on organic actions, the influence of local upon constitutional, and constitutional upon local affections. We find that the system does not more decidedly and peculiarly influence the appearance and character of a local disease, than the latter excites and affects the system, which in its turn re-acts upon the cause of its disturbance, and thus propagates a reciprocity of evil actions, whose continuance is very likely to terminate in that derangement and exhaustion of action and disorganization of structure preliminary to and productive of dissolution. We do not understand the specific nature of that action which an affection of a part produces on the constitution at large, nor are we sufficiently acquainted with that balance of actions and functions which constitutes health, to explain the necessity for that perversion of what we term healthy sensations or feelings, occasioned by the various changes which take place in the circulatory, respiratory, and secretory functions, on the application of any cause capable of depressing, modifying, or exciting them.

The man who views the human body as a mere machine, and attempts to account for its continued movements and various elaborations on mechanical prin-



ciples, without reflecting on the agency of the vital principle, will explain to us the impairment or suspension of its action by reference to some ostensible defect in its structure—some change in its organization, but is quite at a loss to account for dissolution unattended by any structural change, or any obvious evidences of a defect in the formation of the machine; and he who searches only for some alteration of vital actions, and forgets that they are superadded to an engine whose functions they dispose and regulate, is too apt to confine himself to an investigation of those functions whose integrity he believes to constitute the sole perfection of health. Each party will speak of his vital change or organic alteration in accordance with his particular and exclusive views, and restricting himself from an enlarged and extended view of the phenomena of life, will modify his notions of disease, and fashion his indications of cure accordingly.

If we consider that the vital principle is diffused throughout the entire system, and pervades every part of it—gives vigour to the heart, and energy to the brain—and is perpetuated by no self-generating power or unimpairment of existence, but is secreted, renovated, or maintained, by the action of those parts to whose action it gave a primitive impulse, we can account for many deviations from perfect health at present inexplicable. We can in this way explain that impairment of strength and elasticity consequent on diminished force and vigour of the circulation—that stupor and inertia resulting from compression of the brain—and that languor and lassitude produced by the transmission of vitiated and depraved fluids.

If the principle of life be the cause of the establishment of what are termed the phenomena of life, requiring for its perpetuity and integrity a certain perfection and balance of the action of the system, we arrive at a certain point of knowledge concerning the essence of human existence hitherto unattained; and which must be considered a material advance towards a thorough acquaintance with the dependencies of animated nature.

I have assumed that what has been termed the principle of life depends for its various degrees of perfection on the vigour and integrity of the actions of

the system, and that its impairment or derangement produces those feelings of languor, excitement, and energy, which characterise particular constitutions and peculiar conditions of health, because I am unacquainted with any quality of matter, *quasi* matter, possessing any property capable of arousing such feelings or producing such changes—because other components of the system become deteriorated by use—and because I have every where observed throughout the system a mutual dependence for action and support. It would be at variance with the established laws of nature to assume that what constitutes so important an agent in the human body should retain its perfection of existence without any means of reparation, or that its use should occasion no impairment; and it would be still more preposterous to assume that we are endowed with an essence superadded to visible structure, capable of self-generation, uninfluenced by and not at all depending on organic function—an attribute of existence uninjured by the deterioration the actions of the system involve. If that essence, which is properly called the principle of life, were undecaying in its nature, existence would be infinite, and health and strength unvarying;—if it were not undecaying in its nature, but altogether independent of the animal functions, the energies of man would experience a gradual decline without any period of revived and augmented power;—if it were capable of self-generation or self-renovation, it would, according to our present notions, constitute an anomaly in the laws of nature too strange for belief, unless proved by facts and reasoning of the most unquestionable truth and cogency. I have explained my reasons for supposing that it is dependent on the actions of the system for its continuance and degree of perfection, and for believing that it is regulated by the functions of those parts to which it originally gave a power of action; and its maintenance, variability, and extinction, would certainly appear to be more consistently explained in this manner, than by any preposterous notions concerning its independent existence, self-generating or self-renovating power, or immunity from that depravity to which all the other components of the system are subject, by reason of the operations necessary for the continuance of life.

I know it has been asserted without any qualification, that life does not depend on organization, although we invariably find the life of a part lost when its organization is destroyed. If the action of inflammation produce mortification of a limb, surely the life of that limb cannot be said to remain? Yet if we admit that life is, strictly speaking, independent of organization, a change of organization ought not materially to influence, much less destroy, the life of a part. In the instance before us, the action of inflammation has destroyed the organization of a part, and its powers of vitality have gradually become extinct in consequence; or, in other words, the phenomena of life have ceased to be evident in that part. I do not see how it is possible to separate altogether the dependence of life on organization, or to believe that the actions of the system do not constitute the support of that power by which its energies are revived and continued.

Life, originating and supported as I have represented, would appear to be diffused throughout the whole system, in proportions varying with the requirements and exigencies of each part; and to be in every part the same in nature, varying only in its proportions; and not to reside in any one reservoir or concentrated point, from whence it is transmitted and to which it is returned—for, in that case, when the vitality of a part were destroyed, the life of the other parts would be increased by the addition of that vitality which, in the healthy condition of the part which has perished, tended to its support;—but that each part has a distinct modicum of vitality, maintained, augmented, or diminished, by its own actions, or the action of some proximate part, in accordance with its wants, whether it be necessary to resist disorder, disease, or dissolution; or merely to preserve that balance and reciprocity of actions, which in the healthy and unimpaired constitution is continually going forward.

I believe life and organization to have a mutual relation to, and dependence on, each other; but, inasmuch as organization may remain scarcely at all impaired for a certain time after the extinction of life, and life does never continue when organization is destroyed, the dependence of life on organization

would appear to be much greater than the dependence of organization on life.

There are a variety of interesting inquiries connected with this subject; but the nature of my present communication prevents me from enlarging upon it on the present occasion.

The many cases I have witnessed, by convincing me of the certain fatality of fungus hæmatodes of the eye, if uninfluenced by treatment, have caused me to direct my attention particularly to its early stages; and by ascertaining, as far as possible, those symptoms which indicate its confinement to that part where it is first visible, to discover how far its removal, when so limited, is calculated to arrest that extension of action so uniformly unmanageable and destructive. In the prosecution of an inquiry so important, close and assiduous attention to its primitive appearances, and its various forms, has been joined to a watchful notice of any variety of symptoms which has appeared to belong to the disease when blended with an affection of other parts or organs, and a careful dissection in reference particularly to the origin of the morbid growth.

It must be obvious, that if it can be proved by distinct characteristics to be a disease affecting at its origin only one part, and confining its action to a distinct texture, arising from some error of that part, and merely affecting the constitution by an extension of its action, or by a process of absorption, it ought to be removed as soon as discovered; and to enable us to know when such an operation is advisable, it can only be necessary to point out those phenomena which are essentially characteristic of its existence. We cannot, however, discover an invariable uniformity of appearance, nor detect a precisely similar train of symptoms; for we do not find such an unvarying identity in these respects in other diseases. We can only, therefore, fix on some general phenomena, and by bringing together the various collateral circumstances of the case, arrive at a conclusion; never forgetting that as the operation to be performed, though likely to disfigure the patient, will not be attended with that fatality which a refusal to operate would insure, should a disease which appeared to be doubtful be permitted to remain and contaminate the system at large, it would be better

to perform it at the hazard of its non-requirement, than expose the patient to the anguish and destruction consequent on the continued existence of the malady.

[To be continued.]

## ANALYSES OF BRITISH MEDICAL JOURNALS.

### THE GLASGOW MEDICAL JOURNAL.

August 1830.

[Concluded from the preceding No.]

#### *New Mode of preparing the Carbonate of Iron.*

WE resume our analysis of our Glasgow contemporary, by directing attention to some observations of Mr. Clark on the carbonate of iron. Admitting the utility of the medicine, he remarks upon the ineligibility of the preparation in general use, and proposes the following as an improved substitute:—

“Take of sulphate of iron and subcarbonate of soda, each 8 ounces. Pound each salt, and dissolve them separately in warm water. If necessary, filter. Being filtered and cool, mix the solutions in a deep vessel, capable of holding one or two gallons of water, which fill up cold. Stir, let subside, and then decant the clear liquid from the precipitate. Fill up again with water, and likewise again decant; and repeat this operation two or three times, so as to separate the soluble salts. Next put the precipitate on a filter of cotton or linen cloth, supported by a square frame. When the water has ceased to pass, gather into one hand the edges of the filter, so as to make it a sort of bag, and with the other twist it round from the holding hand downwards, so as to squeeze out the remaining water. The precipitate will now have the appearance of clay, too soft for moulding. With soft sugar and aromatic powder, in suitable proportions, make it into an electuary.

“Thus we obtain a carbonate of iron, uniform in its properties, hardly deteriorated by the process it undergoes, and little liable to change by keeping.

“The precipitated carbonate of iron, while yet moist, is soluble in carbonic acid. Hence a teaspoonful of the above electuary is soon dissolved in a

glass of ginger beer, except the aromatic powder it contains. It may be asked, therefore, whether an eligible medicine might not be obtained as follows:—“Having filled a dozen of bottles with ginger beer, divide among them the precipitate from an ounce of sulphate of iron, and an ounce of subcarbonate of soda: then cork and set them aside, as usual, till they be ready. I presume that the production of carbonic acid, by the fermenting process, would go on as usual, and that when drawn in due time, we would find the carbonate of iron entirely dissolved in the ginger beer.”

#### *Case of Artificial Anus, in which a large portion of the Intestine was removed by Ligature.*

This case is made the subject of an interesting paper, by Dr. Weir, in which he makes frequent reference to the more elaborate essay of M. Dupuytren, in our second volume. The general subject will be found ably discussed and illustrated by turning to the article in question, and the plate which accompanies it, (see Med. Gaz. vol ii. p. 10); and we shall, therefore, confine ourselves at present to the case before us.

A lady, aged 62, had for many years laboured under a reducible inguinal hernia, which became strangulated in 1817, and again in 1818, soon after which it became irreducible, and gradually increased in size. In September 1819 mortification of the tumor took place, in consequence of inflammation following a blow. An opening was made, but sloughing of the bowel had occurred, and after the parts cleaned an artificial anus remained. Various plans of compression were adopted to close this unnatural opening, but without avail, the chief difficulty consisting in the tendency of the bowel to become everted: By the beginning of January 1820 the protruded substance formed a large red tumor, nearly twice as large as the fist, and was only returned with great difficulty. These attacks of eversion frequently recurred, and the replacement of the parts became each time more and more difficult till August last (1829), when its reduction was found to be impossible.

“For the sake of better accommodation and further advice, she was now removed to the Royal Infirmary, where



she came under my care on the 5th of September, 1829.

"The following is an accurate description of her state at this time, taken from the Hospital Journal:—'For the last eleven years has had an artificial anus in the right groin. At present there is a tumor in this situation, of a flattened conical shape, fully the size of the fist, produced by eversion of the gut. It presents a reddish-coloured mucous surface, and three orifices—one on its apex, from which the fæces are discharged—another about one inch above this, which is the orifice of the lower part of the gut—and a third, of small size, about an inch and a half inferior to the apex, apparently the orifice of the appendix cæci vermiformis. Immediately inferior to tumor, and extending downwards into right labium, is a soft pulpy swelling, which appears to be the remains of the herniary sac. Tumor at present is not painful, but the gut sometimes becomes much more everted, and then there is considerable dragging pain in the abdomen, attended with hiccup and vomiting. It can in general be completely returned, but this is frequently found difficult, and for the last three weeks impossible. When reduced, an opening remains, which is scarcely the size of a half-crown piece, and from which a portion of the feculent matter is discharged, but the greater part passes per anum. General health good.'

"A consultation having been called, some objections were stated to my proposal of removing with the scalpel the everted portion of the intestine, on the ground that the peritoneum might be injured, and the cavity of the abdomen laid open; it was therefore thought better, first to attempt to destroy the septum or partition, which was now evident between the two ends of the intestine—to destroy it, not only to the extent of that portion protruded, but also for some way within the belly, thus restoring the continuity of the canal; after which the tumor might be removed, either by the knife or ligature, without any danger. It may be remarked here, in regard to this septum, that it was never distinctly seen, except when eversion was present, because it was only then that two openings could be discovered. When the everted portion was returned, there was only one orifice, and that not a large one, visible; and

although I frequently at former times examined the parts very carefully, neither the tendinous septum, said to be always present in cases of this description, nor the inferior orifice of the intestine, could be found. It was only after the infirmity had continued for several years, and when the eversion was complete, that these were ascertained to exist.

"On the 19th Sept. Dupuytren's forceps for artificial anus was introduced, and tightened so as to include about two inches and a half of the tendinous band. This produced slight colicky pains, with nausea, and some fever, and the pulse rose to 100; but these symptoms abated in about three days after the introduction of the instrument. On the 26th Sept. it dropped away, after being attached for seven days. It was again applied, including about an inch and a half more of the septum, being thus introduced into the cavity of the intestine within the belly. It remained attached for six days, when it fell off. In both instances, a small narrow slip of shrivelled intestine was found between the blades. There was now a free communication between the upper and lower portions of the intestine, and by means of injections thrown into the rectum, frequent well-formed stools were passed per anum, the first since her admission into the hospital. Still some portion of the fæces got out by the preternatural opening, and on careful examination, a small part of the septum being found yet undivided, the instrument was again introduced, including about one inch, which it destroyed in three days, and the injections were continued as formerly. Pressure was now applied very firmly and carefully for some days, which had the effect of preventing the fæces passing, but fluid got out in great abundance. The continuity of the canal being thus restored, I now proceeded to get quit of the large tumor formed by the everted mucous coat of the intestine.

"On the 19th Oct. a ligature was put round it, and tightened until it produced considerable pain, and the tumor became of a deep purple colour. During the afternoon, she had slight nausea, with some fever, but, on the whole, very little constitutional effect was produced. An enema was given, which operated. Next day, the tumor was larger than formerly, but she had no symptom of

obstruction or abdominal inflammation. The ligature was tightened. On the 22d it was again tightened, and in the evening she had some pain in the abdomen, very severe pain at the root of the tumor itself, just where the ligature encircled it; the pulse was 110, she was inclined to vomit, and the appetite had fallen off. These symptoms, I thought, did not warrant the removal of the ligature, as such were expected to supervene, in some measure, in consequence of its application. They abated a little after the warm bath and a mild laxative. On the 24th Oct., five days from the application of the ligature, the tumor was double the size it had been on admission; it was excessively painful when touched, and was covered with a copious secretion of fluid, and on several parts of its surface there was superficial sloughing. There was no pain of abdomen, and no vomiting; the pulse was 108, and the skin rather hot; no fæces had been discharged by the artificial opening since the ligature was applied.

The pain in the tumor, and especially around its root, continuing very severe, the ligature was removed, after having been round it for six days. The tumor was found to be cut through about one-third of its circumference, and a deep ulcer was discovered in the integuments at its root, occasioned by the ligature being pressed very firmly between the tumor and skin, in consequence of its increased bulk. Copious evacuations had taken place by the rectum, but part of the fæces now passed through the opening made by the ligature.

"In a day or two a smaller ligature was applied to the part of the tumor still attached. It immediately became livid, and in a short time its surface was covered with a copious secretion of gelatinous matter: the ligature being tightened daily, it soon became a large putrid mass, and in seven days, being all cut through, except a small bridle, and its weight producing some tendency to further eversion, the adhering portion was snipped through with the scissors, and the whole removed. During the last application of the ligature, she never had any constitutional symptoms, further than slight pains in the abdomen, uneasy sensation at stomach, and occasional hiccup; the appetite continued good, the pulse was only 80, and she had no vomiting. With the exception of an opiate occasionally, she required no medicine.

"After the whole of this mass of everted intestine was thus removed, which was on the 5th Nov., the feculent matter escaped by the artificial opening in great quantity, very little passed by the anus, and it appeared that a permanent cure was still as far off as ever. Contraction, however, began immediately to take place, and the superior and inferior orifices were distinctly seen, with a small portion of the remains of the septum, of little depth, between them. To destroy this, Dupuytren's instrument was again applied on the 21st Nov.; and on the 13th Dec. the following report was taken:—'The instrument remained attached only two days. The continuity of the canal by this last application was rendered perfect, but there has been still a considerable quantity of feculent matter passing out at the artificial opening. Injections have been thrown up the rectum daily. The upper orifice still shews a slight tendency to eversion, and there is an evident attempt in this part to throw the fæces towards the lower opening, although this last appears drawn up some way under the integuments. Yesterday she had two natural evacuations per anum without an injection.'

"For the next two months the artificial opening slowly but steadily contracted, and on the 22d Feb. 1830, it was so small as to be wholly covered with the point of the thumb. The fæces, however, still passed through it, although stools were procured per anum with the assistance of purgative enemata. Pressure had been carefully applied, and the lips of the opening drawn together by adhesive plaister. The edges were also occasionally touched with the *nitras argenti*. During the month of March, the actual canterbury was applied repeatedly and freely to the edges of the integuments forming the artificial opening, and this appeared to assist the contraction greatly. It was intended to pare the edges with the scalpel, and afterwards bring them together, either by the interrupted suture or hare-lip pins; but as there had been a regular and certain contraction going on, it was thought best to allow this to proceed to its utmost extent, as, if the operation did not succeed, the opening would in all probability be made much larger by the attempt.

"On the 2d April, when the artificial anus was so small as to be easily covered

with the point of the little finger, the actual cautery was applied very freely to the edges all round, and they were afterwards brought together and accurately retained by means of a hare-lip pin and ligature. This produced most excruciating pain, which continued for several hours. The pin remained in for three days, when the skin covering one of the ends gave way, and the opening remained as before. Neither good nor harm resulted from this application, although, while the pin remained, only fluid escaped by the artificial anus.

“On the 9th April this woman left the hospital, I presume having got tired of the many ineffectual attempts made to cure her of her disgusting infirmity.”

The last article is a report of cases treated at the Glasgow Infirmary, by Mr. Cowan. Some of these we shall take a future opportunity of giving among our Hospital Reports. The present number of the journal we have just analysed is decidedly better than several which have lately appeared, and contains several important papers. In some which had preceded it, matter was admitted which we humbly think had better have been omitted. We allude particularly to the discussions at the Medical Society. There must be something particularly good to warrant the publication of these in a quarterly journal. We were induced to discontinue the insertion of similar articles in our own hebdomedical periodical, where many things of temporary interest may with propriety be admitted at the moment, which would be flat and uninteresting a quarter of a year after.

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## MEDICAL GAZETTE.

*Saturday, August 28, 1830.*

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“*Licet omnibus, licet etiam mihi, dignitatem Artis Medicæ tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso.*”—CICERO.

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### DREADFUL EXAMPLE OF MAL-PRACTICE.

WE have this week to record a very melancholy event—one which is calculated to excite such feelings of indig-

nation and horror as render it extremely difficult to confine our expressions within those limits which we owe it alike to our readers and to ourselves to observe. In our last No., in exposing the ignorance of another pretender in medicine, we promised to give some illustrations of the practice of a still more mischievous quack—Mr. St. John Long, of Harley-street. We had received information of the miserable situation of the family of Mrs. Cashin, but at that time one still lingered, and the inquest on the other had not yet been held. Fortunately for the cause of humanity, the appalling disclosures which have since taken place have given to the story a degree of publicity which it is to be devoutly hoped will render it a useful warning to many, who, however incapable of appreciating argument, may yet judge of plain, unvarnished facts.

The tale is a short one, and needs no embellishment; we shall relate it simply, and without comment.

A lady, named Cashin, residing in Ireland, had two daughters,—one of them, about 16, laboured under pulmonary consumption—the other, a few years older, enjoyed good health. Being informed by the medical men in attendance, of the nature of the complaint, and of the little prospect which remained of ultimate recovery, the lady in an evil hour resolved upon coming to London, to place her sick child under the care of Mr. Long—a resolution which she carried into effect a few weeks ago. His usual method of applying rubefacients was adopted by her new attendant, in conjunction with the use of medicated inhalations, as practised in Harley-street. That the young lady got no better, is not to be wondered at. But though the means employed did not succeed in alleviating the symptoms, they did succeed in occasioning certain effects which Mr. Long repeatedly declared it was his wish to produce. Her sufferings were



horribly aggravated, and instead of the last stages of the disease being passed in that tranquil decline—that mere fading of the vital spark till it almost imperceptibly ceases to glow, which we so often observe in consumption—this poor girl's death-bed was rendered one of torture. A large patch of honey-combed ulceration was formed on her bosom, and another on her back—her frame was screwed up to the highest pitch of excitement by stimulants—and when another practitioner (Mr. Watson, of Berners'-Street,) was at length called in, she was found with a foul tongue, a flushed cheek, and a pulse at a hundred and fifty, under the use of five or six glasses of claret and a pint of ale a-day! Such a state, we need scarcely say, did not last long, and death soon put an end to her misery.

But we have stated that there was another daughter, and that she was well :—will it be credited that there exists a knave so rapacious, or a mother so weak? this girl, who was in perfect health, was subjected to the pernicious operations of this infamous quack, to have extracted from her the “acrid matter” which he asserts to be the cause of all diseases, and which he makes the credulous believe he can remove, and thus prevent the development of future disease. The inflammation which he thus excited in the back ran on to mortification, accompanied by constant vomiting, and the usual train of symptoms sympathetic of such local mischief. Beginning, at length, to distrust the skill of Mr. Long, who still persisted that every thing was going on as he could wish, Mrs. Cashin sent for Mr. Brodie, who appears first to have opened her eyes as to the real situation of her daughter. Mr. Long saw her again, at a later hour on the same day, and even then assured the lady, in his own peculiar jargon, that Miss Cashin was doing well, the symptoms being in ac-

cordance with his “system.” She died that night.

Thus, in the prime of her youth, and in the plenitude of health, was this ill-fated girl hurried to the tomb, a victim to her mother's folly, and—would it might be the last!—a sacrifice to the heartless cupidity of this most ignorant and presumptuous man. But let him beware; even should the imperfection of our laws enable him to escape the punishment due to his delinquencies, it cannot prevent the ruinous consequences of the disclosure which has been made; nor will the trumpet-tongue of indignation which now resounds in his ear from every quarter, be so intolerable to bear as the still small voice, which will make itself heard in spite of all his efforts to drown it, and will whisper the memory of his victims when they have long been silent in their graves. Again, we say, let him beware. We have already exposed his ignorance (than which nothing more gross has ever come beneath our notice), and we shall open our pages to a detail of his malpractices. We have begun this exposure by recording one death—the direct, obvious, and unequivocal effect of his applications on a person previously in perfect health; an event so fearful that even the foolhardy must be startled into caution, and the weakest of his proselytes made to doubt the validity of his pretensions. But let it not be supposed that this is a solitary instance, or an accidental occurrence. When we mention the names of Lieutenant Seymour and Mr. Ludlum, the oracle of Harley-Street will feel that we speak advisedly; that the hour of deception and success is gone by, and that the day of exposure and retribution is come.

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We subjoin an account of the Coroner's Inquest, taken from various papers. The circumstances appear to us of sufficient importance to be placed on record,

# INQUEST ON THE BODY OF MISS CASHIN, LATELY UNDER THE CARE OF MR. ST. JOHN LONG.

FIRST DAY.

## *Evidence of Mrs. Roddis.*

ON Saturday morning last, at eleven o'clock, Mr. Stirling, the coroner for Middlesex, and a jury, assembled at the Gate House public-house, in the Hampstead Road, to inquire into the circumstances attending the death of Miss Catherine Cashin, a young lady highly connected in Ireland, who is stated to have died in consequence of treatment received by her from a person named Long, residing in Harley-Street, Cavendish-Square, and who professes to be able to prevent the possibility of disease of almost any description, but particularly consumption, by a new mode of practice. A solicitor attended to watch the inquiry, on behalf of Mr. Long.

Mrs. Mary Anne Roddis stated that she was the wife of Mr. Roddis, a wine-merchant, residing at No. 32, Mornington-Place, Hampstead-Road, and that the deceased young lady, her mother, and a younger sister, were lodgers in their house. They were persons of the highest respectability, and kept their carriage. On Friday se'nnight witness was requested by Mrs. Cashin to accompany her and the deceased to Mr. Long's in Harley-Street, to state the fears which she (Mrs. Cashin) had respecting the wound in the back of the deceased. They went together and saw Mr. Long, who looked at the deceased's back, and said it was *precisely as he wished it to be*. On the following day (Saturday), at an early hour, witness was called up to the apartment of the deceased, and found her in the greatest agony, and witness then looked at her back and saw it was in a state which it was impossible for her to describe. On the evening of the same day Mr. Long came to see Miss Cashin, and looked at her back, and said he thought it was in a very good state, and "that he would give a hundred guineas if he could produce a similar wound upon the persons of some of his patients." Witness pointed out one particular spot upon the deceased's back, and asked what could cause such an appearance: and he said it was in consequence of *inhaling*, which was a part of his system; and unless those appearances were produced he could expect no beneficial result. Witness then

begged that he would give her a composing draught, to which he replied, that a tumbler of mulled port wine was a better composing draught than all the doctors in the world could prescribe. The symptoms which alarmed witness continued. The doctor said these were what he wished to see, and denied that the patient was in danger. At length Mr. Brodie, the surgeon, was sent for, and he ordered a poultice to be applied to the wound in the back, and some saline draughts. The sickness under which the deceased laboured was stayed by Mr. Brodie's remedies, and she seemed more composed. On the following morning witness left her in the care of the nurse, but while witness was at breakfast, a bell rung violently, and on reaching deceased's room she found her in the agonies of death. Witness tried to administer some brandy, but her jaws were quite set, and she immediately breathed her last.

In answer to questions from the Coroner, the Jury, and the solicitor for Mr. Long, the witness stated that she understood the system of Mr. Long to be professedly that he could prevent any disease with which a person was likely to be affected from coming on, by making a wound in the back, and treating the patient according to his plan. *The deceased was in perfect health when she first applied to Mr. Long, and she applied to him only in consequence of understanding that it had gone abroad that he could prevent any disorder with which a person was likely to be afflicted.*

## *Evidence of Mr. Brodie.*

Mr. Benjamin Collins Brodie, of No. 16, Saville-Row, surgeon, sworn: He was sent for to Mornington-Place, between five and six on Monday last, and saw the deceased in bed. He looked at her back, and found a slough as large as the palm of his hand. The skin was discoloured to a considerable extent, as if it had been inflamed, and was threatening to become a slough also. Her stomach was much disturbed, and witness was informed that she brought up whatever was swallowed almost immediately. He prescribed what were, in his opinion, suitable remedies, and said he would call the next day, believing at that time that, although the patient was very ill, she was not in immediate danger. On the following day witness called again, and found that the young

lady was dead: and, on examining her back, he found that the sloughing (a term synonymous with mortification) had very considerably extended, and witness concluded had been the cause of her death.

Mr. Brodie underwent a long examination by the solicitor for Mr. Long, but he elicited nothing material, except the expression of that able surgeon's opinion that death was produced by the wound in the back, and not by any inflammation of the stomach. Mr. Brodie knew nothing of Mr. Long's mode of practice, but he had been informed by numerous patients of his own that he professed to be able to prevent diseases, especially consumption, by the means already described.

A Juror: Do you think such a mode of treatment as has been described likely to effect that object?

Mr. Brodie: I would rather say nothing about that. Certainly, however, producing a slough in the back is not a matter likely to prevent disease.

At this period a conversation arose as to the propriety of opening the body, and finally it was determined to adjourn the inquest until Monday, in order that the body might be opened.

Mr. Sweetman, an Irish gentleman, brother-in-law to the deceased, was present, and said that every facility should be given to procure the fullest investigation into this extraordinary affair. This gentleman stated that Miss Ellen Cashel, the sister of the young lady whose unhappy death was the subject of the present inquiry, had died that day, and that she also was a patient of Mr. Long's. An extraordinary sensation was produced amongst the Jury by this announcement, and Mr. Sweetman shed tears when he mentioned the fact.—The inquest was then adjourned until Monday.

#### SECOND DAY.

#### *Sir F. Burdett's Testimony in favour of Mr. Long.*

The adjourned inquest met on Monday, at twelve o'clock, when there was an immense assemblage of persons anxious to be present, and a neighbouring house was understood to be filled with ladies anxious to bear testimony in favour of Mr. Long. Mr. Wakley (who

is at present a candidate for the vacant office of Coroner) took the opportunity—as he had done on the preceding day—of making himself conspicuous; but on this occasion he was opposed by one the peculiar style of whose oratory rendered him in every way calculated to cope with such an antagonist, namely, Mr. Adolphus. Much acrimonious sparring took place, which, under other circumstances, would have been amusing\*. We mean not, however, to find fault with Wakley's share in this investigation: setting aside the impudence of thrusting himself into the business at all—which, however, was not out of character—we look upon his presence as having been of some service, particularly as regards his cross-examination of Sir Francis Burdett, who really made a most lamentable figure. He admitted that he knew nothing whatever about the case in question—that though he had been for some time under Mr. Long's care, he had derived not the slightest benefit from his remedies—that he did not know of any who had done so except Lord Sligo, who told him he had been cured of the gout, but which we happen to know returned again very soon after; and yet, after all these admissions, the worthy Baronet unblushingly stated that several persons had put themselves under Mr. Long's care in consequence of his recommendation! Our space admits not of giving an account of the proceedings of the second day in detail, nor are they of a nature to justify our filling our pages with such irrelevant evidence and desultory discussions as then took place, and which it appears to us the Coroner was highly to blame in permitting. What fell from the Member for Westminster, however, is too important to be omitted:—we beg to direct particular attention to what he says with regard

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\* See page 863.



to the injunction of secrecy, from which it would appear that he signed a paper without knowing what it was !

Mr. Adolphus : I believe, Sir Francis Burdett, you have had some means of making yourself acquainted with some portion of Mr. Long's mode of practice ?

Sir F. Burdett : I have been admitted to Mr. Long's house, and have seen him practise several times.

Mr. Adolphus : Did his practice appear to you to be dangerous, or likely to be beneficial to his patients ?

Sir F. Burdett : I should think there was not the slightest degree of danger in it, certainly.

Mr. Adolphus : Were the manners of Mr. Long those of a mild and humane man, or those of a cruel and unfeeling practitioner ?

Sir F. Burdett : Quite the contrary of the latter, certainly. But perhaps I had better state what passed. I went to Mr. Long in consequence of hearing that he had cured two persons of *tic douloureux*, with a view to see whether any relief could be afforded to the Marquis of Anglesey, and, from what I saw, was so convinced there was no danger in his mode of treatment, that having the gout in my hand, I desired Mr. Long to try what effect it might have upon me—more, however, for the purpose of having an opportunity of reporting to Lord Anglesey, that there was no danger in the operation, than the hope that it would do any good for the gout. I did report to Lord Anglesey the result of my observation, and I believe he would have had recourse to Mr. Long, if he had not got better just at that time. So satisfied was I from what I saw, and from what I heard from persons attending Mr. Long for advice, of the beneficial effects of his practice, that one or two other individuals put themselves under his care at my recommendation.

The Coroner : You know nothing, Sir Francis, I presume, as to the treatment administered to Miss Cashin ?

Sir F. Burdett : No.

Mr. Wakley : Pray, Sir Francis Burdett, what operation was the Marquis of Anglesey to undergo ?

Sir F. Burdett : I only know that he was to have an outward application by friction. I know nothing of the ingredients of which the preparation that was to be used was composed. I know he

operated on others who were labouring under the same complaint, and they told me they had received benefit.

Mr. Wakley : Do you know, of your own knowledge, of any one who has been cured by Mr. Long ?

Sir F. Burdett : No, I do not. Lord Sligo told me he had been cured of the gout by Mr. Long, and I dare say he was for the time, but how long it would last I don't know.

Mr. Wakley : Did you receive any benefit from the application ?

Sir F. Burdett : None whatever.

Mr. Wakley : When did you first see Mr. Long ?

Sir F. Burdett : About two months ago, I think ; but I am not sure.

Mr. Wakley : Was there any injunction imposed upon you as to secrecy ?

Sir F. Burdett : None, that I recollect.

Mr. Wakley : Did you not sign a book ?

Sir F. Burdett : I believe I signed something, but I am sure I do not now recollect what it was. I believe, however, there was something said about keeping it secret.

Mr. Wakley : Can you judge of the ingredients of the preparation from what you saw of its application ?

Sir F. Burdett : No, I cannot. I do not know what effect it produced, except that it made the skin look red and angry, as is generally the case where friction is used. I saw no appearance of mortification. I saw the process of inhaling performed, but I do not know the qualities of the gas inhaled.

Mr. Wakley : Have you ever made medicine your study ?

Sir F. Burdett : Oh dear, no.

Mr. Wakley : Should you be able to distinguish a glass of water from a glass of prussic acid by the appearance ?

Sir F. Burdett : I don't think I should.

*Extraordinary Evidence of Dr. Alexander Thomson.*

This evidence of Sir Francis (who would have acted more judiciously, both towards Mr. Long and himself, if he had staid at home,) was followed by that of Dr. Alexander Thomson. How an investigation of this nature came to be placed in such hands we are utterly at a loss to divine, but the result clearly

proved his total unfitness for the task assigned to him. With singular obliquity of judgment he read to the jury a long rignarole description of the post-mortem appearances—confounding what was important with what was entirely irrelevant, and clothing the whole in such a profusion of technical minutiae as completely puzzled those to whom it was intended he should have afforded information. Examinations of such a nature really ought not to be entrusted to inexperienced young men—and the result, as might have been expected, was, that it became necessary to have the body disinterred, and subjected to further investigation in the presence of competent persons. At the conclusion of his almost interminable description, the Coroner and Jury endeavoured, by putting some questions, to ascertain what he thought had been the cause of death, as they had not been able to gather this from his written communication. It appeared that there was nothing indicative of consumption, but that there was something which he regarded as inflammation of the stomach. He said the appearances were such as he had seen in death from colchicum, and soon after requested that Mr. Brodie's prescription should be read. This was found to have been a saline effervescing mixture, with a little spirit of nutmeg and a few drops of laudanum. If there was inflammation of the stomach, which we very much doubt, its appearance would have been very satisfactorily explained by the absorption either of tartar emetic or arsenic from the skin;—but the circumstance of the vomiting having been controlled by the medicine, renders it probable that it was merely sympathetic of the local affection, and that what was regarded as inflammation consisted merely in increased vascularity from irritation.

But Dr. Thomson was not less unfortunate in his evidence as to what had

taken place externally. Be it remembered that the Coroner and Jury had themselves seen the body;—something, however, in Dr. Thomson's evidence led one of them to ask—

Juror: Was there not what is called a slough or sloughing in the back?

Dr. Thomson: I am sorry you have put your question in that way, because it places me in a very delicate situation. There was no sloughing. By sloughing we mean the coming away of a dead part.

Juror: Was there nothing of that kind in the back?

Dr. Thomson: I should say, certainly not.

But again:—

A Juror: If you had seen the deceased ten days ago perfectly well, would you have caused, by any application, such a state of the back?

Dr. Thomson: No, unless I wished to kill my patient.

It thus appears that there was something the matter with the back, and something very extraordinary too; but then Mr. Brodie had said there was a slough, whereas Dr. Thomson repeatedly told the Jury there was no slough; thus leading them to imagine that they had been misinformed on this point. The explanation, however, is to be found in Dr. Thomson's ignorance, who himself favours us with a definition of sloughing, which he says is "the coming away of a dead part." We beg to inform Dr. Thomson that it means no such thing, and that he has confounded with the process of sloughing a circumstance which may or may not take place;—many persons, as in the instance of this poor girl, die of sloughing before any separation of the dead and living parts takes place. Being asked what the state of parts on the back was, he answered, "hypertrophy—or hyper-organization!!" Would any of our readers have believed that a man, calling himself a medical practitioner, could have contrived so

to bewilder a plain question, and to give utterance to such unintelligible nonsense? When Dr. Thomson is again placed in a similar "delicate situation," he had as well bear in mind that he is placed there to afford information, not to display his own parts. His fine-drawn distinctions, even if they had been right, were marvellously ill-timed, when addressing a jury of unprofessional men, and his evidence excited feelings of the strongest indignation among all his professional brethren who were present. As we have already said, in consequence of the unsatisfactory nature of Dr. Thomson's statements, the inquest was again adjourned,—and this brings us to the third day.

### THIRD DAY.

#### *Evidence of various gentlemen who examined the Body.*

[We omit Dr. Thomson's evidence, not regarding it as of sufficient importance for insertion. He mentioned on this occasion, that there was no difference of opinion between Mr. Brodie and himself as to the state of the back. We presume, either that Mr. Brodie had explained to him the meaning of the word "slough," or that he had referred to Cooper's Surgical Dictionary for it.]

Mr. Thomas King, surgeon, was next sworn, and examined by the Coroner.—Attended the examination of the body yesterday; saw on the back, between the shoulders, or thereabouts, a large scar, or disorganized or burnt piece of skin; all the surrounding parts under the skin were gorged with serum; there was no process of separation evident; the spinal marrow had the appearance which I have generally seen after death by violent local injury, when the body has been examined eight or ten days after death, and it has been kept tolerably cool. Every part contained within the cranium appeared (to witness) to be perfectly healthy. The body had the appearance of being in good condition; that was, to have been that of a person in a healthy state, and who had died after a very short illness. Did not examine the state of the stomach and pleura, but only the parts already mentioned.

By a Juror.—Took notice of the back; the state of it appeared to have

been produced by a scorching heat; for instance, if a piece of red-hot iron, nearly the size of the crown of the hat, had been applied for about a quarter of an hour, it would produce a similar appearance. Can form no idea of what produced it. Mortification surgically applies to a long process as well as to a separation, but here the skin was completely destroyed; it was so destroyed that it must have been thrown off; no earthly power could have restored it. This applies only to the skin; the parts underneath were not destroyed.

By another Juror.—No substance, to the mind of the witness, was more likely to have done this than some strong arsenical preparation. It must have been a very strong escharotic that was applied. Judging from the examination, should say that very few persons could possibly recover after such a local injury. It might kill the strongest man; but the weakest might recover, if proper precautions were taken immediately after the infliction of such an injury. Knew nothing of Mr. Long's treatment. God forbid that he (witness) should cause, under any circumstances, such a wound to be made on the back of any young lady.

By another Juror.—Having seen the back, as a surgeon could not form the slightest possible conjecture why, or for what purpose, such an injury was produced. Perhaps he (witness) had better state he had seen the derivative plan practised in the most extensive manner by Larry and Dupuytren, but he had never seen a fourth of the injury to some parts produced as was on this lady's back. From what he saw, the injury on the back was the sole cause of the death.

By Mr. Adolphus.—Had said he did not see the stomach or pleura. Believed he had heard Dr. A. Thomson say the stomach was inflamed.

By a Juror.—The shock on the nervous system by so great a local injury must produce death very suddenly, without any marked change in the local appearances in most cases.

By a Juror.—Certainly means might have been used to have assisted nature in throwing off the slough. Had he have seen that, he would have done something with that view. It would have roused him (witness) to have adopted the most efficient mode of treatment. Believed the patient was not a consumptive subject.



Mr. W. Wildgoose \*, surgeon, sworn. — Having read the depositions that had been taken, found it difficult for him to say what the cause of death had been. Having nothing else to go by than the appearances after death, he was bound to suppose that the injury which had been inflicted had been the cause of death, but he could not swear that it was. The internal surface of the stomach and duodenum were inflamed. Inflammation of the stomach could not exist for any length of time without killing the patient, independent of any other injury or disease. Had seen the back, and if he (witness) had nothing to go by but the back alone, he should not have supposed it would have caused death.

By a Juror.—Could not tell whether the inflammation of the bowels could have been occasioned by the state of the back or not: it might or might not by sympathy. Had been in the habit of examining bodies after death. The appearance of the back was somewhat like as if lunar caustic had been applied to the part. The skin was mortified, but the muscles were uninjured. Had seen such injuries before. Had seen deeper ulcerations produced by caustic. Had never seen an injury intentionally produced to such an extent on the back of any individual. Had he been called in, and supposing the inflammation of the stomach to have been sympathetic, he might have done something for the relief of the patient. Had no means of knowing what had caused the wound. He should not like to see such a wound on the back of any patient of his. Knew nothing of Mr. Long's mode of treatment.

By Mr. Adolphus.—Knew Mr. Long. Had heard from very respectable people that he was a successful practitioner. Had known him for some years, and seen many patients go to him.

By a Juror.—Did not know, until this investigation had begun, whether the persons he had seen go to Mr. Long were patients or visitors, as he had never been inquisitive respecting Mr. Long's affairs; believed part of his plan of treatment to be that of counter-irritation; that was, to produce an external illness for the purpose of drawing off an internal disease. Would not have made a wound so large as this on the back under the circumstances.

\* This gentleman attended on behalf of Mr. Long.—E. G.

From what he had seen since death, he did not think he should have been justified in making so large a wound. Consumption consisted of tubercles of the lungs. His conduct in treatment would be much influenced by a mother, or an old woman, saying other branches of a patient's family had died of a consumption, but not so much as to be induced to make such a large eschar as this was.

By Mr. Wakley: Mr. Long was not studying the profession, nor was he an authorised surgeon when he (witness) first knew him. Could not say how many years, but it was before he began this system. (Great laughter.) Did not know that he had received a medical education. Did not know what trade or profession he was of some few years ago. A short time ago he was a painter. He was not now of the medical profession, but was what was called a professed curer of consumption.

Dr. John Hogg sworn: Was present yesterday in the vault in Moorfields chapel, and assisted in examining the head and spine of the deceased. The first thing that struck him as remarkable was the state of the back. It presented between the shoulder-blades a very large kind of eschar; it appeared as if it had been scorched by fire. The body itself was not at all emaciated, but muscular, symmetrical, and in many respects well formed. Dr. Thomson, witness, and others, proceeded to examine the spine; obtained a full view of the spinal cord. There was certainly an appearance on the sheath of the spinal cord, opposite to where the external sore was, of discolouration. This was very minutely examined. On removing it to the day-light, it exhibited a crimson appearance. The other part of the sheath was of a more natural colour. On opening the sheath, it was evidently thickened at the part where it was discoloured; but had no appearance of disease. The cord itself was not at all affected. The examination was next directed to the head. On removing the skull-cap, the brain presented an unusually firm and healthy appearance; portions of it were removed and examined as to its structure, which exhibited a state of perfect health. The brain was perfectly sound at the basis, and at the origin of all the cerebral nerves, and all the nerves emanating from the brain itself. Not having been present at the former examination, it was difficult for him (witness) to form

an opinion as to the cause of the death, but should say that the violence which had been done to the nervous system was quite sufficient to cause death, particularly in the case of a nervous and delicate young lady.

By a Juror: The sheath of the spinal cord was discoloured from external causes. The opinions of the different gentlemen present at the examination were not communicated to each other; each gentleman made and brought away his own observations. As a professional man, he (witness) should certainly not create such a wound on a healthy person. Had not the slightest idea what such a wound could have been made for. Should say decidedly that the lady had not been labouring under the effect of any disease except that of the wound produced on the back, as far as he saw; in death even the body had the appearance of health. Had never seen a more beautifully-formed body. Had never seen such a wound produced on an unhealthy person, and should be sorry to produce such a one. If the mother of a patient had gone to him, and said other children of her's had died of consumption, and that she was afraid of the one produced falling a victim to the same disease, there were prophylactics that might be had recourse to, but he should never think of making such a wound.

[Dr. Goodeve followed, and corroborated the preceding statements. The only part of his evidence which we shall give is the following apposite reply to a question from Mr. Adolphus.]

Mr. Adolphus: Have you not known different medical men prescribe directly opposite to each other in the same cases—the one, for instance, ordering warm and stimulating medicine, the other cooling and aperient?

Dr. Goodeve: Yes; but to sick persons only, never to healthy subjects. For healthy subjects I know of but one mode of treatment, which is to leave them alone. (A laugh.) Such a wound as has been described would be likely to produce a great degree of sympathetic fever.

Dr. James Johnson examined: I reside in Suffolk-Place, Pall-Mall East. I was present at the examination of the body yesterday. The sheath of the spine was slightly discoloured, but the whole was not thickened. I do not think the redness was the effect of inflammation. I think it was merely

tinged by the blood itself. I conceive that the patient died from several effects, the primary cause being from local inflammation, which produced incipient gangrene. The next effect was fever resulting from that inflammation; and, thirdly, the inflammation of the membranes of the stomach and pleura connected with the fever. I suppose the fever to have been produced by the local inflammation of the back, and to have been the symptomatic or sympathetic fever of the inflammation of the back and the incipient gangrene. I think death was produced by these circumstances combined, all depending upon inflammation in the back. The cause of this inflammation is kept a secret, therefore we can only guess at it.

A Juror: Could you by analyzation discover what the preparation was which was used?

Dr. Johnson: No; we might discover some portions of the preparation, but we could not discover what they were. I did not examine the body internally. I should not have made such a wound in any disease, and certainly not in a healthy subject.

[Mr. Mackelcan and Mr. Evans, who were next examined, coincided with the preceding witnesses.]

Mr. Patrick Sweetman sworn: I am at present residing at 13, Park-Place, Baker-Street. Miss Cashin left Dublin about two months before her death in good health, and I next saw her two days before she died. When I arrived from Ireland on Saturday evening, Mr. Long was with the deceased. I saw Mr. Long, who said to me that the deceased was just in the state which he wished, and was going on remarkably well. It was stated in Mr. Long's presence, by Mrs. Roddis, that her stomach had refused all food. He said that would soon be remedied. He left the house after seeing her back, and having a conversation with her mother. He was introduced to me, and he asked me to breakfast the next morning. When I saw him the next morning (Sunday), I told him that I had arrived from Ireland to ascertain the state of Miss Cashin's health, for that I had received a letter from her, in which she stated that she was very poorly since she had been induced to put herself under Mr. Long's course of treatment. I said I was going to write to her friends, and I wished to know what I could say as to

her back and stomach. He told me that we need be under no apprehension, for that her back was in the state that he wished it to be. When I returned home I told her that I was about to write to Mrs. Sweetman, in Dublin, to inform her, that from what I had seen other advice must be called in. The deceased was averse to having other advice, as Mr. Long had repeatedly assured her that she would be well in a few days. I called on Mr. Brodie the next morning and left a note, in consequence of which he called in the course of the day. The last time I saw the deceased alive was at 9 o'clock on Monday evening. I asked her to let me feel her pulse, and I did so. It was very feeble and slow, and would not bear the least pressure. Her hand was cooler than natural. I do not know any thing else, except that in a letter I received from her previous to the last, she described herself as in good health, and fatter than ever she was.—(Here the witness was much affected, and was glad to avail himself of a mixture of sal volatile and water, which was prepared for him.)—The deceased was 24 years of age. I have heard of one of the family dying of consumption. This was about a year ago: it was a brother. The deceased's sister, Ellen, died since the commencement of this inquiry. She was 16 years of age. It was to put her under Mr. Long's care that her mother and sister left Ireland with her. I believe her complaint was consumption. She came to Mr. Long as a consumptive patient. I believe she had also a wound in her back; but I never saw it. From the beginning he said he could not undertake her cure.

A Juror: Do you know who or what induced Miss C. Cashin to go to Mr. Long?

Mr. Sweetman: Mr. Long stated to me the causes of her putting herself under his care. He told me that a young lady, one of his patients, had asked him what he thought of the health of Miss Catherine Cashin, who was in the habit of going to his house with her sister Ellen, and Mr. Long told the young lady that Miss Cashin would be seized with consumption in less than two months, unless she allowed herself to be rubbed by him with his mixture. She informed her mother of what Mr. Long had said, and she consented to her undergoing this treatment, lest she might have to accuse her-

self of any neglect in the care of her children. Mr. Long told me he required every one to sign a book. He required those who signed it not to divulge any thing regarding the mixture and the inhaling which he prescribed. The inhaling was going on in the house while I was there. I signed the book, as a mere matter of form, at his request. He charged a guinea each visit for each young lady. I did not inhale. I should be very sorry to do so. He demanded no fee from me.

[In consequence of the number of witnesses who still remained to be examined, the inquest was again adjourned.]

#### SPARRING BETWEEN ADOLPHUS AND WAKLEY.

THE following is a specimen of the manner in which Mr. Adolphus illustrates medical questions:—

Dr. Thomson had stated, that the investigation of the cause of death was not quite conclusive, in consequence of his being prevented from examining the spinal marrow and brain; whereas, had he done so, he thought he should be able to speak conclusively upon the subject.

Wakley then asked, what, if he found no diseased appearances in the brain and spinal marrow, he would infer as the cause of death? to which as a "fishing" question, and as depending upon the result of some other question not determined, Mr. Adolphus objected, and thus illustrated the evil consequences of allowing such a mode of inquiry. "I might see," he said, "in going through the street a house on fire: it might be asked how that fire had originated; I might fail in learning the cause, and I might thence infer that the owner had set fire to his own house, and yet it might not be true." Wakley listened with a countenance perfectly unperturbed, but made no reply to the argument.

#### SIR HENRY HALFORD.

HIS Majesty has been graciously pleased, through the medium of his Royal Highness the Duke of Cambridge, to bestow on Sir Henry Halford the Grand Cross of the Guelph.

We take the opportunity, in announcing the above most honourable distinction conferred upon a member of



our profession, to contradict a calumny which lately appeared in some of the papers. The statement that Sir Henry Hallford had appropriated to himself a double salary as Physician to the King, is utterly without foundation. For the present, while Sir Henry is President of the College of Physicians, the salary of one Physician in Ordinary is saved to the Privy Purse.

#### SIR GILBERT BLANE.

WE have heard with much regret that this distinguished veteran has resigned his appointment as Physician to the King. This step is understood to have been taken in consequence of the place in which his name appears in the list published in the official Gazette.

### HOSPITAL REPORTS.

#### NORFOLK AND NORWICH HOSPITAL.

##### *Adipose Tumor of the Abdomen.*

BARNEY WOODCOCK, æt. 32 years, was admitted on the 3d of April, 1830, with a tumor, as big as two fists, situated on the anterior part of the abdomen, several inches to the right side, and a little above the level of the navel. Its upper margin was near the cartilages of the false ribs; it was, as is usual with such tumors, situated close under the skin, and at its basis so loosely attached by cellular substance that it moved very freely, and could be grasped and lifted up, as it were, from the muscular parietes of the abdomen. It had been present for fourteen years, but the man stated that it has grown more in the last year than all the time before. It was therefore agreed, in consultation, that the tumor should be removed, the patient being willing and desirous that the operation should be performed, if necessary. After a little preparation, by ordering milk diet and one or two purging doses, Mr. Crosse operated upon him on Thursday, April 8th, dissecting off all the skin (which at the centre and most prominent part of the surface adhered very intimately to the tumor), the basis was easily detached, owing to the looseness of the cellular membrane uniting it. One vessel only was tied; dressings with adhesive straps accurately approximating the skin; compresses of lint, and a circular bandage, were applied as usual. The man bore the operation with marked firmness, but was faint before the conclusion; not from loss of blood, for very little was lost, but from pain, and the effort made to bear it well.

April 9th.—Passed a restless night, having, two or three hours only after the opera-

tion, felt a tightness and pain across the body, which greatly distressed him. He had felt chills often, but the nurse had not noticed any shaking fit. His countenance is anxious; tongue furred and white; pulse soft, and only 100 in a minute; he complained much of tightness across the middle of the abdomen, on a level with the navel, and attributed it to the bandage and dressings being tight; but when the bandage and dressings, with the exception of those in contact with the wound, were removed, no constriction was found, nor any thing the matter superficially or in the wound. It was evident the pain was deeper seated in the abdominal cavity, and yet the abdomen seemed not very tender, and would even bear heavy pressure without his complaining. The bandage was re-applied. His bowels had not been relieved since the day before the operation; he was therefore ordered

Cal. gr. v. Ext. Coloc. c. gr. xv. statim et haustus purgans 4tis horis. A clyster was also administered.

At 7 o'clock in the evening he was again visited, and was found suffering from a severe exacerbation of fever. Face red; skin hot; pulse still only 100, but fuller; tongue white, and much furred; breathing 40 in a minute, but heaving, and accompanied with a noise. Pain across the abdomen, but tenderness on pressure chiefly on the right side of the navel, just below the situation of the wound. He has had two motions since the morning, and passed his urine well.

Venæsect. ad ℥xij. et Hirudines, xvj. ad regionem abdom. dolentem.

Saturday, 10th.—He has had less pain, and the tenderness is limited to a space which the hand would cover, situated just below the inferior termination of the wound. The wound was exposed, which looks quiet and well. Pulse 90; fever now absent.

Applic. Hirudines, xx. ad part. dolent. et cap. Ol. Ricini, ℥j. statim. cont. haustus purgans 4tis horis donec alvus bene respondens.

Sunday, 11th.—The patient has slept well during the night, and is now very tranquil. Pulse good. The wound is dressed daily, and has a very healthy appearance. Bowels sluggish.

Rep. haust. et enema.

Monday, 12th.—He was relieved by the clyster; slept well, and complains of no pain.

13th.—Continues in the same favourable state.

14th.—No alteration in his general condition, wound looking well.

18th.—He now gets up, and half the wound is united.

Saturday, 24th.—Discharged cured.

# THE LONDON MEDICAL GAZETTE,

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OF

Medicine and the Collateral Sciences.

SATURDAY, SEPTEMBER 4, 1830.

## LECTURES ON SURGERY,

*Delivered at St. Bartholomew's Hospital,*

By WILLIAM LAWRENCE, F.R.S.

### LECTURE LXXVIII.

*Effusion of Urine—Fistula in Perineo—Retention of Urine—Enlargement of the Prostate Gland—Prostatic Calculi—Rupture of the Bladder—Inflammation of the Bladder—Incontinence of Urine—Peculiar Vascular Excrescence at the Orifice of the Urethra in Females.*

WHEN the urethra is lacerated in consequence of external violence, as by a fall on the perineum, effusion of urine takes place into the surrounding cellular membrane, and the same kind of effects ensue, though perhaps in a less degree, as those I have described to you as occurring when the urethra ulcerates behind a stricture. Of course, the same kind of measures must be adopted to remedy the mischief; that is, you must cut down in the perineum at the place where the urethra has been wounded, and thus provide a direct exit for the urine, so as to prevent its further injection into the cellular membrane. In consequence of the extravasation of urine, either from ulceration of the urethra behind a stricture, or from a wound in the canal, or the formation of an abscess in the neighbourhood of the urethra communicating with it, it sometimes happens that, after the primary effects of the mischief have passed away, an opening remains in the perineum or scrotum, or some part of the neighbourhood of the urethra, through which some portion of the urine is habitually discharged—a permanent fistulous aperture giving issue to a little purulent matter and more or less urine; this is called *Fistula in perineo*,—the more common situation of these fistulous openings being in the perineum. The circumstance which gives rise to the

occurrence of fistula in perineo, is, in the first instance, a serious obstacle to the evacuation of the urine by its natural course; for example, either stricture or laceration of the canal by violence. The inflammation and various effects which follow this occurrence produce a new, an artificial opening for the discharge of the urine, which will continue to pass through the false aperture as long as the impediment to its direct exit through the natural channel remains.

The first object, therefore, for the relief of a patient from the inconvenience of fistula in perineo, is to remove the impediment which opposes the natural discharge of the urine, and to endeavour to bring the whole of the urethra into its natural state, and to its full dimensions; if you accomplish this, the fistulous opening closes of itself; for instance, if you make an opening into the urethra, when it is of its full dimensions, to remove a calculus from it, you do not find that a fistulous opening remains afterwards, for there is a free passage to the urine; no obstruction exists in the natural channel; the aperture you have made closes up in the same way that any other wound would do, and you restore the natural state of the urethra. Though you will frequently find that fistulous apertures in the same way become closed, yet it has happened, in some instances, although the urethra has been apparently effectually enlarged, that the fistulous aperture is not closed in the way desired; and, under such circumstances, it is perhaps difficult to point out any mode of treatment by which you can depend on closing it. Sir Astley Cooper has recommended a simple operation, which may be tried, but which I have not seen practised; it consists in detaching a flap from the integuments, so as to cut through the fistulous aperture, and then laying the flap down again. Suppose this point [sketching a diagram] should represent the fistulous opening, the mode of proceeding is to make two lateral incisions, one running on each side of the aperture, and to join those by a trans-

verse incision towards the anterior part of the penis; then dissect the flap down to its base, and by so doing you cut through the fistula, or the unnatural canal; then lay down the flap in its place again. You can readily suppose that the divided sides of the fistula will unite, and there is a reasonable prospect that the opening will become obliterated. I have not seen this operation performed, but it is a simple proceeding, and deserves a trial.

In instances in which the cellular and adipose membranes surrounding the urethra—that is, of the perineum and scrotum—have become thickened and hardened, and where numerous fistulous apertures exist, partly communicating with each other, the best mode of proceeding is to lay open those apertures, when we shall probably find that there will be only one aperture communicating with the urethra. Introduce a probe or director, slit up the fistulous openings, and, as far as you can, lay them into one. This step must necessarily precede the adoption of any other measures you may have recourse to in such cases. If you have either to cut down through the perineum into the urethra, or to divide the stricture in the manner employed by Mr. Stafford, or by the forcible introduction of a small bougie, or any means of that kind, you will find great advantage from the previous free division of the fistulous openings; you will find that the division of these openings will lead to considerable reduction of the swelling, and to consequent diminution of the induration that has formed in the situations I have mentioned to you.

*Retention of urine* may occur from other causes affecting the urethra; that is, you may have active inflammation occurring in the immediate neighbourhood of the canal—inflammation of a plegmonous character, followed by abscess; and this will cause difficulty in passing the water, and perhaps temporary retention of urine. Extravasation of blood, in consequence of a bruise or injury, may press upon the urethra, and cause difficulty in expelling the urine, although the urethra may not actually be lacerated. You are not to suppose, therefore, that in every case where violence has been inflicted, and where difficulty has been experienced in voiding the urine, that the urethra is necessarily torn. In many cases there may be simple ecchymosis creating difficulty, and you may find that you are able to introduce a catheter, and thus relieve the patient.

Retention of urine may arise from calculi entering the urethra, and not passing along the whole of the canal; for the calculus may be stopped in some particular part of the passage. Foreign bodies may be introduced into the urethra, and thus produce difficulty in voiding the urine, or even actual retention.

Under these various circumstances, the extraction of the calculus or foreign body, or its removal from the urethra by excision, is all that is required.

The *Prostate gland* is liable to inflammation, which may be either of the acute or chronic kind. In acute inflammation of the prostate, there is considerable pain in the situation of the gland, pain which is referred by the sensations of the patient to the neck of the bladder or perineum, accompanied by a sense of heat and weight in those parts, which is aggravated when the urine is voided, or when the bowels are evacuated; for the prostate lies so nearly in contact with the rectum, that the passage of the faeces through it exerts a pressure on that part, sufficient to produce considerable pain, when the gland is in a state of inflammation. The neighbourhood of the prostate to the neck of the bladder, and the immediate continuation of the mucous surface lining the urethra within the prostate, with the mucous coat of the bladder, render it very probable that this viscus may participate in the inflammation; and then you will also have the symptoms which I have mentioned as characterising inflammation of the bladder—such as a constant urgent desire to evacuate the urine. You cannot be under much uncertainty as to whether the prostate is inflamed or not, because you gain clear information on the subject, by introducing your finger into the rectum. The prostate lies on the upper and anterior part of the rectum, connected with it only by a little loose cellular membrane, and thus, when you introduce the finger into the rectum, you can distinctly ascertain the outline of the prostate; ascertain whether it is enlarged, or whether it is preternaturally sensible on pressure, and these circumstances will enable you to decide whether it is in a state of inflammation or not.

When the existence of inflammation is ascertained by the symptoms I have mentioned, you must adopt an antiphlogistic treatment; you practice general or local bleeding, according to the strength of the patient and urgency of the case; give diluent and mucilaginous drinks; and endeavour to reduce the inflammation of the gland in the same way in which you would combat inflammation of any other part of the body. The difficulty of voiding the water, in consequence of the swollen state of the prostate, constitutes a very prominent part of the symptoms under which the patient labours. The mechanical difficulty which this swelling opposes, occasions the patient to make water with considerable pain, and prevents him from evacuating the bladder without considerable force and straining, particularly at the commencement of the act of voiding the urine, diminishes the size of the stream, reduces the evacuation of the urine to the expulsion of it drop by drop, and, in fact, if it go on to a certain



extent, may cause even complete retention. In those cases you should avoid, if possible, the introduction of the catheter. There is a pretty active inflammation of the parts against which, in its introduction, the point of the catheter will necessarily come, and through which it must pass in order to enter the bladder. The introduction of an instrument, under such circumstances, must be expected to aggravate the sufferings of the patient at the time, and therefore, if you can put a stop to the inflammation, and enable him to make water without the employment of an instrument at all, it will be very desirable for you so to do. Trust, therefore, to antiphlogistic means, with which fomentations, the use of the hip or warm bath, may be combined; and do not have recourse to the use of an instrument, unless these means fail, and there should be an actual necessity for relieving the patient from the danger which the difficulty of evacuating the urine produces. If you come then to the introduction of an instrument, you should be aware of the particular change in the urethra which the state of the prostate produces. The swelled prostate does not diminish the dimensions of the urethra, but it alters the course and shape of the canal in that part which goes through the gland; it presses the sides of the urethra together, and the swelling of the prostate, the principal part of which is situated below the urethra, that is, between the urethra and rectum, pushes the urethra up towards the pubes; at the same time, the enlargement of the prostate in size—an enlargement which takes place in all directions—increases the length of this part of the canal. The changes then produced are, first, an elevation of the urethra upwards towards the pubes, an elongation of the canal in its prostatic portion, and a pressing together of the sides of it laterally. The best instrument in this case is a large elastic catheter; and indeed I should observe to you, whether you employ an elastic or a silver catheter in cases of enlarged prostate, you will always find it necessary to use an instrument of full size—an instrument such as I have got here [shewing it], which is of the full dimensions of the healthy urethra, and which will pass on much more easily than instruments which are smaller. The best instrument, then, as I have just mentioned, is the catheter made of elastic gum; and you should use those instruments which are made so as to retain their curved shape without a stilette. The ordinary gum catheters are made straight, so that, after you introduce one of them, if you take out the curved stilette, it becomes straight, like a bougie; but by Mr. Weiss, and probably by others, elastic gum catheters are fabricated which retain the curve without the stilette, so that you can introduce a catheter of that kind in a case of inflamed

prostate. If this can be done—there being no hard substance in it—the purpose will be accomplished with less pain to the patient, and less irritation to the inflamed part, than the introduction of an instrument which is not flexible would occasion. If, however, you should fail in introducing such an instrument, you must have recourse to the silver catheter; and here you may employ an instrument with a similar curve to that which I have described to you, except that the extremity of the instrument should be prolonged, so as to represent more than the quarter of a circle. The curved part of an ordinary catheter, staff, or sound, may form the quarter of a circle four inches in diameter; but in cases of chronic inflammation of the prostate gland, you should have the curve prolonged one half or three fourths of an inch over that, and it should be such as to enable the end of the instrument to rise over the elevated part of the urethra. This [exhibiting it] is an instrument of full size, where the prolongation of the curve is carried to the full extent which is necessary; it is not necessary for it always to have this extent; but this sort of catheter, which is about fourteen inches in length, you will sometimes find useful where the prostate is enlarged. I have employed it several times in such cases with great ease and perfect success.

Inflammation of the prostate gland is not an affection observed in young persons; it is mostly met with in persons at or after the middle period of life, more especially in those advancing in years. Chronic inflammation and consequent slow enlargement of the prostate, is a more common affection than acute inflammation of the gland. The prostate slowly acquires a considerable augmentation in bulk, at the same time that it becomes firmer and more compact in its texture; and this is the kind of change which has commonly been denominated *schirrus* of the prostate gland. When you hear this term, you are not to understand that the prostate undergoes a change similar to that which constitutes *schirrus* in the strict sense in which we now employ the term; it does not undergo any change of a malignant character—the term is here employed only to denote the firmness and hardness which the prostate acquires. [Mr. Lawrence here exhibited various preparations.] This is an example of *schirrus* of the prostate, where, as you will see, it has acquired the size of my fist; and where, on making a section of it, it is found to consist of a dense, thick, compact, and almost homogeneous structure; and it forms certainly an immense tumor intervening between the bladder and rectum. This is another specimen of enlargement of the prostate gland, which is very much thickened, and you may easily conceive what the difficulties must have been in the evacuation of the urine with this great mass, which

is as large as a middle-sized orange, in such a situation.

In the cases which I have now pointed out to you, you observe the prostate enlarges in its whole substance, in all directions, and you see the tumor which it forms lies principally below the urethra, because in the natural state the chief bulk of the prostate is situated between the urethra and the rectum. Now in some cases we find that the prostate enlarges more particularly just under the opening by which the urethra proceeds from the bladder—the portion which forms the inferior boundary of the opening of the urethra is the seat of enlargement; it rises up into the neck of the bladder in the form of a valve-like prominence. This part has been called by Sir E. Home the third lobe of the prostate gland. We find that the prostate consists of two large lateral divisions, which are not absolutely distinct from each other, being completely united below; however, they are called the two lateral lobes, and the prominence which projects just below the orifice of the urethra, where it enters into the bladder, is the part called the third lobe. In cases where the prostate generally is enlarged, it frequently happens that this particular portion, which constitutes the inferior boundary of the orifice of the urethra, is more enlarged than the rest; and in some cases, where the lateral lobes of the gland are not much altered in size, this middle lobe, as it is called, becomes considerably augmented in bulk. [The Lecturer here exhibited some specimens.] Here is an enlargement of the middle lobe, which has been perforated by the introduction of a catheter; the two lateral lobes being also increased in size. Here is another enlargement of the third lobe, where the two lateral lobes seem to be nearly in the natural state. Here is another, where the third lobe is as large as a walnut, projecting into the bladder, and forming a regular lobular protrusion into it. Here is another variety, where it forms a sort of fungous protuberance, so that there is a small valve-like fold produced by it. You see, therefore, that this kind of enlargement is by no means uncommon.

This chronic inflammation, and slow enlargement of the prostate, constituting what has been called a schirrous state of the gland, often come on insensibly, without any inconvenience that attracts the attention of the patient; they proceed to a very considerable degree without apparently exciting any symptoms sufficiently marked to induce him to complain; and, in fact, he does not make any complaint until the size of the prostate generally, or until the enlargement of the third lobe, produces such difficulty in the evacuation of the urine, as to force him to seek for assistance. The patient, in the first instance, finds that he does not void his water so easily as before—he finds it necessary to

make a more powerful effort at the commencement of the act—he is obliged to strain and to exert himself more considerably—though when this difficulty is once overcome, the contents of the bladder will flow out easily enough. In proportion as the enlargement increases, the difficulty increases; after some time the urine comes off only in a small stream, perhaps by drops, and possibly complete retention may occur. This enlargement of the third lobe of the prostate produces a peculiar mechanical obstacle to the evacuation of the urine, for the enlarged portion rising up in the lower part of the bladder when the patient exerts considerable force to expel the urine, presses against the orifice of the urethra, and thus acting like a valve, prevents the complete evacuation of the urine. A portion of the contents of the bladder may be expelled with great force, but a certain part always remains behind; and thus, although the patient passes some water, he does not empty the bladder completely, and a degree of retention of urine is established: hence it happens, that although the patient voids a little urine, the desire to make water immediately returns. Of this state of things you gain a knowledge by introducing a catheter after the patient has made water; let him empty the bladder as much as he can, and then introduce a catheter, and if you find, as you do, that several ounces, half a pint, or a pint of water flows off, you then ascertain that the bladder does not completely empty itself—that there is a certain portion of its contents remaining, and that this is the cause of the continued urgency to make water, and the inconvenience which the patient experiences.

In this chronic enlargement of the prostate, we have not much power of relieving the patient by producing any great reduction of the affected part. I have mentioned to you that the enlargement of the part is not of a schirrous or cancerous nature, as the name would lead you to infer; yet, although it is not of a malignant kind, we seldom find that we can reduce its size. By attention, however, to diet, careful attention to the state of the stomach and bowels—by a course of mild, alterative, and aperient medicines, we may perhaps keep the patient in a tolerably healthy state. Attempts have been made, sometimes, to reduce this enlargement by a seton or issue in the perineum or upper part of the thigh; but it is an inconvenient course of proceeding, and one to which patients are not inclined to submit. This is a complaint which you find taking place in persons advanced in years; you do not find it in young persons,—I have certainly seen a very few cases of it in young persons, but the great majority of those you have to treat for this complaint are past the middle period of life.

When the affection of the prostate has gone the length of producing the serious obstruction to the evacuation of the urine which I have mentioned, this of course requires the assistance of the surgeon. You should employ the catheter in order to get rid of the contents of the bladder, and to get the bladder into such a state as to enable it completely to expel the urine it may contain. In instances where the bladder does not evacuate its contents completely—where there is a constant accumulation of urine within it, which you detect in the manner I have described, the course you have to pursue is, to introduce the catheter regularly once or twice in the four-and-twenty hours, so as to draw off the urine, and give the bladder the opportunity of recovering its power of contraction; and after following this up for some time—perhaps two or three weeks, you generally find that the evil is removed, and that the patient recovers the power of completely emptying his bladder. In this chronic condition of enlargement of the prostate, you find it, perhaps, still more necessary than in a case of acute inflammation of the prostate, to attend to those changes in the direction and length of the canal which I have already pointed out, and to use an instrument of the particular configuration I have described. It is necessary that the catheter should be longer than that which is employed under ordinary circumstances—give it the length, perhaps, of fourteen inches, curved, as I have stated, and always use a catheter of full size. It has happened to me repeatedly to be consulted in cases of difficulty in making water, caused by an enlarged state of the prostate, and where those who have previously seen the patients, in consequence of attempting to introduce instruments of small size, have not been able to get off the water—where they have found a difficulty which they supposed to proceed from stricture; and in such cases, when the smallest catheter could not be introduced, I have repeatedly succeeded in introducing an instrument of the full size with the greatest ease. It is of great importance, therefore, in cases of this kind, that you should be provided with instruments which, in point of size and configuration, are adapted to the particular states I have described. You can easily suppose the state of mind of a patient who has not made water for some time, the great feeling of distress which he experiences, and how grateful he is to a person who, without giving him any pain, is able effectually to relieve him at once from that indescribable state of suffering and distress.

The prostate gland is subject to the accumulation of calculi in it—that is, peculiar calculous concretions form in the prostate, and are disseminated throughout its substance. [Mr. Lawrence here exhibited two specimens of this kind.]

These cases are seldom the subject of surgical treatment. When calculi of this kind form in the prostate, they escape after a certain time into the urethra, and are voided with the urine. They sometimes produce uneasiness, but seldom much, except when passing through the urethra. These calculi are sometimes felt on the introduction of an instrument through the prostate; but they do not produce the inconvenience attending calculi in the bladder. We have little, if any, means for their removal, and I merely mention the subject to you, that you may be aware of the possibility of the existence of calculi in that situation.

The bladder is sometimes ruptured in consequence of external violence, particularly in pugilistic contests. When persons are engaged in these matches, they endeavour to hurt each other in every possible way as much as they can; and I believe in some parts of the country it falls within the rules of *honourable* warfare that if one throws the other on the ground, he may come upon him with his knees, striking with all his weight upon the abdomen. Now these contests sometimes take place when people have been drinking—are half tipsy, and have their bladders pretty much distended; and when they do take place under these circumstances, it has not very uncommonly happened that rupture of the bladder has been produced; the urine then escapes into the abdomen, and violent inflammation ensues, which terminates fatally in a very short time. In a case of that kind, if we should see the patient soon after the occurrence of the injury, and the circumstance should enable us to ascertain what has taken place, all we can do to afford relief is to introduce a catheter into the bladder, and to leave it there to let the urine flow off in that way, so that it may not pass into the cavity of the abdomen; but I am not aware of any case where this accident has happened in which the patient has recovered.

The bladder, when excessively distended, may burst. Now, when we speak of the bursting of the bladder, we do not exactly mean that it gives way in the same manner as the bladder would burst in the dead subject, if it were excessively distended; for you would find that a bladder, if it is excessively distended and ruptured, will probably do so by sloughing—as an aneurismal tumor does when its coverings are rendered very thin. This is, however, a rare termination of excessive distention of the bladder; it is much more common to have inflammation and ulceration of the urethra behind the stricture taking place, and then that course of things which I have already had occasion to describe.

The bladder may be the seat of inflammation—the mucous membrane of the bladder may be inflamed, and such an occurrence I



have already described in speaking of gonorrhœa. The mucous membrane, however, of the bladder may be inflamed under other circumstances—in consequence of inflammation of the urethra, or violence offered to that part. Inflammation of the bladder is attended by violent pain in the lower and anterior part of the abdomen, with an incessant desire to evacuate the urine, and with mucous, purulent, or bloody discharge mixed with it; the mucous discharge, when it exists, generally being of a peculiarly thick, ropy kind, which separates from the urine, subsides to the bottom, and adheres firmly to the vessel in which it is contained, so that, when you pour off the water, you have a thick viscid mucous substance, almost as thick as bird-lime, adhering to the bottom of the utensil.

An antiphlogistic treatment in the active stage, subsequently narcotics, either in the form of clyster or suppository, with diluent and mucilaginous drinks, are the means you are to employ in inflammation of this viscus.

Incontinence of urine arises in consequence of inflammation of the bladder—that is, in the inflamed state the bladder perhaps can hardly bear the presence of even the smallest quantity of water, so that there is an incessant desire to expel the urine immediately on its being secreted, and this is called incontinence of urine. This affection, however, sometimes takes place under circumstances where the immediate cause of it is not quite so obvious. It is by no means uncommon in young subjects—in children—occurring in them particularly in the night. They hold their water very well during the day-time, but when they go to bed the contents of the bladder escape insensibly during their sleep, and thus they wet the bed. This often goes on to a very considerable length, and children are punished for it. An idea is entertained that they will not evacuate the contents of the bladder in the proper way, from negligence or carelessness: however, there are many instances in which we cannot refer it to that cause; and in the majority of cases, if not in all, it is to be referred to disease, and does not depend on the will of the patient. It should seem that, in these instances, there may be a condition of the bladder something like that of chronic or slight inflammation, so that it is excited by the presence of urine in a greater degree than usual; inasmuch that the contraction of the bladder, which in the natural state is a kind of half-involuntary act, takes place more readily than under ordinary circumstances; the bladder contracts, and the urine is evacuated without awakening the patient.

In these cases our first object is to take care that the stomach and bowels shall be kept in a proper state, by regulating the diet

and the patient's general mode of living, and by doing this, we, in a great majority of instances, put a stop to the affection, but not in all. If we find further measures necessary, we employ in succession the warm bath, the tepid bath, and the cold bath; and if these fail, we may then have recourse to what seldom will fail, the application of a blister to the lower and anterior part of the abdomen in the neighbourhood of the bladder.

Incontinence of urine may sometimes, perhaps, arise from mechanical causes; a calculus for instance, in the bladder, may be so lodged in relation to the orifice of the urethra, as to close up a portion of it, and leave the rest open for the continued escape of the urine.

Retention of urine frequently takes place in consequence of particular states of the bladder. It will be produced, in the first instance, from a complete interruption or diminution of the nervous influence, as in the case of serious injury to the spinal cord, from fracture of the spinal column, or concussion of the cord. The contractile power of the muscular coat is lost; under such circumstances the patient has not the power of emptying the bladder, and we are obliged to relieve him with the catheter. Probably a somewhat analogous case—that is, either an interrupted or diminished influence of that part of the centre of the nervous system with which the nerves of the bladder are connected, produces the retention of urine which takes place in the last stage of typhus. The bladder then becomes distended, and we should relieve it in the usual way; not that it is very necessary as to the result of the case, but it would not be very creditable to us as practitioners to allow that retention of urine to continue. Retention of urine frequently occurs, particularly in old persons, from an over-distended state of bladder, brought on by neglecting to expel the urine when it is accumulated, so that the muscular coat of the bladder loses its power. In elderly persons the sensibility of the bladder seems to be diminished, so that they do not feel the necessity of voiding the urine so much as young persons do. Then, again, a person not being conveniently situated for emptying his bladder, neglects the first call, allows it to become distended, the desire perhaps goes off, a large quantity of water accumulates, and the bladder rises up to the umbilicus, or even higher; and when the patient is in a convenient place, and attempts to empty it, he finds that he is totally unable to do so, and that he cannot void any water at all. We introduce a full-sized catheter, and let off a large quantity—some pints, perhaps; the bladder becomes distended again, and the patient is not able to evacuate its contents by the natural efforts,

therefore we must go on introducing the catheter at short intervals, to prevent the distention, and this gives us an opportunity to the bladder to recover its natural contractile powers; and sometimes several weeks may pass in this way. In such instances we may sometimes, if we do not pay attention to all the circumstances, be misled by this fact, that when the distention has gone on to a certain extent, the resistance which the neck of the bladder naturally affords to the escape of the urine is overcome, it gives way, and the water flows out of itself; thus incontinence of urine is joined to retention. You have, therefore, got apparently two opposite states in the same individual; the bladder is excessively full, the patient cannot evacuate its contents, and yet the water involuntarily flows off in small quantities through the urethra. In the natural state, the contraction of the sphincter of the bladder counterbalances the force which can be exerted by its muscular coat; so that, when we are going to evacuate the water, we are obliged to call in the assistance of the abdominal muscles; and when the muscular contraction of the bladder becomes greater than the resistance which the sphincter offers to it, then the urine passes through the orifice of the urethra; and after the patient is relieved, it produces a renewal of this involuntary flow. In the case, therefore, of an old person who may complain of not being able to hold his water, and when you find the water flowing off involuntarily, do not give any opinion about it till after you have, at all events, laid your hand upon the abdomen, and felt whether the bladder is distended or not; for very serious consequences may be produced by a mistake of this kind. It happened to me, a good while ago, to be sent for to see a gentleman labouring under an affection of the bladder; and the medical attendant who had lately seen him, mentioned that the case was one of great irritability of the bladder—that it would hold no water at all—the urine passing off as fast as it came into it. He said he had been doing all he could to get the natural power of retention of the bladder restored; he directed the patient to drink diluent fluids—in short, he had done all he could to prevent it, but still the water ran off. It appeared to be a singular case; I put my hand under the clothes upon the abdomen, and I felt the fundus of the bladder forced up a good way above the umbilicus. I said I had brought a catheter with me, and that I might just as well introduce it, to see if there was any thing in the bladder. I introduced it, and about five pints of urine immediately flowed off. The fact was, that the bladder had been allowed to be distended in this way about five days before I saw him, and the consequence was, that that

gentlemen never recovered the natural power of emptying the bladder afterwards, but he, after a certain time, acquired the art of introducing the catheter, which he still employs: he can introduce it, and let off the water whenever he finds a desire to do so, but he never has been able to empty the bladder by the natural powers since that time. It is of great importance, therefore, to introduce the catheter in cases where the bladder has been over-distended, and to continue to do so, so as to enable the muscular coat of the bladder to recover its natural contractile power, in order to prevent patients from being reduced to the very serious and unpleasant state of not being able to relieve themselves by their own natural efforts.

The female sex are, in one respect, much more fortunate than we are; they have an urethra of only about an inch in length, and thus they escape all the various ills which we suffer from strictures, and their many pernicious consequences. Luckily, also, gonorrhœa attacks them in another organ, so that, so far as the urethra is concerned, they do not suffer any of the ills which gonorrhœa entails on the male sex. Females are hardly subject to retention of urine in the same sense in which it affects the male; their urethra is so short and so large that there is never any difficulty in the passage of the urine through it. If we are obliged to have recourse to the use of the catheter, it is under circumstances in which we can introduce it with great ease. Except in some cases, where difficulty in expelling the contents of the bladder, in consequence of particular states, or rather changes of position of the uterus—retroversion of the uterus for instance—a point which is considered in midwifery, and which, therefore, I need not enter upon—we are seldom if ever called upon to introduce the catheter. But females go sometimes too long, and neglect to allow the water to flow off at the proper time, and thus retention may occur. This [exhibiting it] is a female catheter: it is a short silver instrument slightly curved. It is not necessary to expose a female patient, in order to introduce the catheter; you insert the finger between the labia, feel the clitoris, carry the left fore-finger on just by the superior margin of the vagina, and then you carry the point of the catheter gently along that finger with the other hand, and just by feeling about a little with the point of the instrument, you can easily introduce it into the urethra under the bed-clothes, and allow the water to run off without exposing the female at all.

I hardly know any kind of disease to which the female urethra is exposed, except one, which is very painful, causing great suffering, although the disease does not appear to be by any means formidable; it is the development of a peculiar vascular ex-

crecence just above the orifice of the urethra, inconsiderable in point of size, but characterised by the bright scarlet colour it exhibits, as if it were filled with blood, and as if the blood were of the florid arterial kind. It is attended with excessive pain; the ordinary movements of the parts on taking exercise, the friction of dress, the approach of any foreign substance—I mean such as a catheter, or any thing that we employ—produce the most exquisite pain, and very great suffering, therefore, almost constantly attends this complaint, which fortunately is rather rare. In the instances I have seen I have attempted to dissect it away: this is very painful, but it is the most effectual mode of proceeding. If the excrescence be of such a size as not to admit of your cutting away the whole, you may destroy it by strong escharotics, such as the nitrate of silver, or potassa fusa in substance.

#### LECTURE LXXIX.

OPERATIONS.—*Trephining—Opening the Lachrymal Duct—Hare-Lip—Extirpation of Tumors from the Mamma—Taking up the Brachial Artery.*

GENTLEMEN,—I was not exactly aware until lately of the great difficulty which exists in procuring the raw material for some part of our studies. I have been endeavouring for several weeks to obtain the means of showing you the surgical operations on the dead body, but I have waited in vain for what I wanted; and as the course and the season altogether are now coming so near to a close, it is necessary to take what we can get, without being very nice on the subject. I am indebted to some gentlemen for allowing me the opportunity of showing you this evening some of the operations of surgery, as far as they can be exhibited on the dead subject.

The first of these which I shall show you, is one that can be demonstrated as well on the subject before us as on any other—the operation of *Trephining*. Here, indeed, as you will easily understand it, is a very simple sort of business—to bore a circular hole in a person's skull with a saw, which, in fact, is the object of trephining. We generally undertake the operation for the purpose of elevating a portion of depressed bone, or it may be undertaken where there is no bone depressed, and where the surface of the skull is entire, in order to give issue to blood or matter supposed to be effused under the skull at a particular point. In the case of fracture of the skull with depression, where we deem it necessary, on account of existing symptoms, to elevate the depressed portion of the bone, it is not necessary that we should perform that operation which is technically called *trepanning* or *trephining*. If

there be a fissure of some length in the skull, and if one side of the broken portion be beaten in under the other, it does not necessarily follow that we should take out a circular portion of bone to elevate the depressed edge. It is only necessary that we should just saw off a thin part of one edge of the bone, and we shall then be able to introduce an elevator, to raise the depressed part to its proper level. Sometimes, without making any opening in the skull, or removing any part of it, we can use the *elevator*, which is an instrument roughened on one surface;—we insinuate the point of it under the edge, so as to enable us to raise the depressed bone. But suppose we cannot use the elevator, we may find it sufficient with a small saw—with Hey's saw—so called from the name of the inventor, the late Mr. Hey, of Leeds—to cut off any portion of the upper part of the bone which prevents our elevating the depressed piece. With one edge of the saw we can cut off any straight part, and with the opposite edge (which is of a semicircular form) we can make a cut a little curved—we can cut off a curved line with this; so that the use of Hey's saw very often enables us to elevate a depressed bone sufficiently, without taking away so much of the skull as would be necessary if we applied the trephine.

The trephine consists of a circular saw, which is worked by a handle. In the first place we make an opening by means of the instrument called the perforator: this makes an aperture in a certain point of the skull, which receives what is called the centre pin of the trephine. This central portion of the trephine can be removed or attached to the trephine at pleasure—we can take it out, and then the trephine consists of a simple circular saw. But if you were to attempt to saw out a piece of the skull with this circular part of the saw simply, it would be very difficult to make a groove, and you could not saw out the portion: the centre pin enables you to fix the circular saw until you can get to a certain depth with the groove, and then you can take it out. It will generally happen, in cases where it is necessary to trephine, that there is already a wound through the soft parts, by which the bone is exposed, and therefore all you have to do is to enlarge that wound, to extend it, and to turn aside the scalp, so as to expose the bone in a proper situation, for the application of the saw or trephine. If there be no wound, I conclude you would not think of doing what was heretofore practised, that of cutting away a circular portion of the soft parts, and removing it;—that was the old way of operating. You are of course aware, that although the integuments may be divided and detached to a considerable extent, if they are laid down again, the divided scalp will unite, and the integuments will close the va-



cancy that is left by the removal of a portion of the bone.

Mr. Lawrence then proceeded to perform the operation—saying:—In the first instance, then, we shall proceed to make the wound in the head: you leave the portion of scalp, merely turning it back; you do not find it necessary to cut it off. Then with this (the perforator) you make an opening, which will receive the centre pin of the trephine. It seems to be quite a mechanical business—it appears to be more the business of a carpenter than of a surgeon. Then you take out the perforator, and you put into the handle of the trephine its centre pin: the centre pin fits into the opening you have already made in the skull, and that keeps the trephine in its place—prevents it from deviating;—now you may saw away as fast as you please, until you get it pretty nearly through;—you do not run the risk of doing any mischief. But after you have sawn in to a certain extent, it is expedient to remove the centre pin of the trephine, for it projects a little beyond it, and if you were not to remove it, you would perforate the skull and dura mater before the circular saw had gone through the bone. Having made the groove of a certain depth, you can then carry it on without the centre pin. The teeth of the trephine are set in such a way as to make a groove of some size; it does not merely make a simple opening, as you will observe, but it destroys the bone to some extent. Now when we begin to think we have sawn nearly through, it is necessary to examine the bottom of the groove all round with a probe, in order that we may not wound the dura mater at any part. The object of the operation is to remove a portion of the skull simply, without wounding the dura mater. You just blow out the sawdust, and feel all round. At present I feel the bottom all the way round, so that I ascertain I have not yet got through at any part. Try again: now you may find that you have sawn through at one point, and not at another; in that case you must bear on that part you have not got through, and not all round equally. Now I just bear upon the lower part of the circle; but when you have got through one part, you must proceed very cautiously, because of course you may expect the skull is very thin in the rest of the groove, and, in general, it will be safer for you to try with the elevator at the time that you have got through at one point, to see if you can break off the portion of bone which is not sawn through. I find that with the elevator in this instance, I have broken through a part which has not been sawn through entirely, and I believe without any injury to the dura mater. This, then, is the operation of trephining, and you will observe that its mechanical performance is a thing much less difficult than the

appreciation of the circumstances that may require it, or the balancing of the considerations for and against it.

#### *Opening the Lachrymal Sac.*

I have already mentioned to you the circumstances under which it may be necessary to make an opening into the lachrymal sac, in order to enable you to clear away any obstruction in the nasal duct; and all I have to show you at present is, the situation and manner in which the opening is to be made in that case. The bony cavity in which the lachrymal sac is lodged, is situated exactly at the inner angle of the eye, nearly opposite to the junction of the two palpebræ towards the nose, one portion of the sac being situated above the junction of the palpebræ, but the greater part below it. The probe which I now pass goes through the lachrymal sac into the duct, and thence into the nose; it goes pretty nearly in a perpendicular line from the superciliary ridge near to the junction of the palpebræ. Opposite the commissure of the two palpebræ there is a small elevation—the tendon of the orbicularis palpebrarum—which is attached to the nasal process of the superior maxillary bone, at the point upon which I now place the knife: about one-third of the sac is above the tendon and two-thirds below it; but the tendon itself, and the fibres of the orbicularis palpebrarum immediately connected with it, lie in close contact with the mucous membrane that lines the sac. The rule, therefore, to be observed in performing the operation of opening the lachrymal sac is this—you see the elevation under the skin produced by the tendon of the orbicularis palpebrarum, or if you should not absolutely see it, just drawing in your mind a line from the junction of the palpebræ to the side of the nose, carry a straight, sharp-pointed, double-edged bistoury—the point of which you place immediately below the tendon—down to the bone, and then you will inevitably make an opening into the lachrymal sac. In a case which requires this operation, the performance of it is rendered easy by this circumstance, that there is an accumulation of tears or purulent matter, causing a tumor at the internal angle of the eye, and that tumor is the point at which the knife is to be plunged into the sac; it goes just below the line of junction of the two palpebræ. Now you will find that the probe will pass in at this aperture. You see that the probe passes not quite perpendicularly downwards, but with a little inclination backwards, and you may easily see that it enters the nose by attending to the depth to which it passes—it goes in about an inch and a half, and nothing can be more simple than this operation.

#### *Hare-Lip.*

I shall next show you the operation for hare-lip. Hare-lip is a natural defect in the for-

mation of the upper lip, consisting in a fissure extending from the margin up to the nostril, so that when the individual puts the muscles of the face and of the lips into action, the sides of this fissure are drawn apart, and a very disagreeable appearance is presented; in fact, in a number of cases of hare-lip, we may not only say the appearance is very disagreeable, but that it constitutes a hideous kind of deformity, which of course the parents and friends of the child are exceedingly anxious to have remedied as soon as possible. This deformity presents itself under different circumstances: there may be simply a fissure in the lip, or there may be also a fissure in the alveolar process of the upper jaw and bony palate, as well as in the soft palate—that is, there may be a complete fissure running from the lip directly through into the pharynx. The fissure may exist on one side only, or it may exist on both sides—that is, you may have two fissures, constituting double hare-lip; and in the latter case there is a small portion between the two fissures, with a portion of bone corresponding to it: you generally find that the fissure extends through the palate, the septum of the nose being visible externally, and indeed you have the cavities of the mouth and nose almost laid into one. Although a great gap appears in the lip when the individual is laughing, there is, in point of fact, no defect as far as substance goes; it is merely a separation, for if you put your fingers to the sides of the gap, and bring the edges together, you find that they can be readily approximated, in such a way as to show that the substance of the lip is as ample as in the natural state; the appearance of deficiency in the substance is only thus apparent when the edges are drawn aside by the muscles being thrown into action. It would be just the same if a perpendicular incision were made in the lip where there was no natural deformity; for if the muscles of the lip were put into motion, the edges of such a wound would be drawn apart, though there were no defect in point of substance.

The operation consists in paring the edges of this fissure, so as to reduce them to the state of a recent clean-cut wound; in bringing them together, and retaining them in this state of apposition, so that they may unite by adhesion or the first intention; and we find, that if this operation is performed at a proper time, and skilfully executed, it will completely remedy the defect. You can do it so completely, that putting out of the question the slight cicatrix that remains after the operation, no one would know that the individual had been at all deformed. The first question in these cases is, what is the time—what is the age, most eligible for the performance of this operation? Should you operate in the period of infancy, or wait till

the child is some years old, as being the proper time for the performance of the operation? Were it in our power, it would be desirable, of course, to unite the edges of the lip, and to remove the deformity as early as possible, as it prevents the child from sucking; the lips cannot be drawn close around the nipple, so that the necessary vacuum cannot be formed with the mouth; therefore the child must be brought up by the hand till this defect is removed. It is not, however, in our power—we do not deem it eligible—to perform the operation immediately after birth; and then the question is, what is the time at which it ought to be performed? Very generally it has been stated, that the performance of this operation should be left till the child is some years old; it is very desirable, however, to remove the defect early, on every account; in my opinion, it is also advantageous as respects the success of the operation, that it should be performed at a comparatively early period. I should say, then, that in the third, fourth, or fifth month after birth it should be performed; at all events, you should perform it at such a period that it will not interfere with the process of dentition. There is often a good deal of irritation going on in the neighbourhood of the part which is the seat of this defect at the time of teething, so that it is desirable you should accomplish the cure before dentition commences, or put it off till after the child has got its teeth; it is, however, in my opinion, better to perform it before. It so happens that I have had under my care, at various times, a great number of cases of this kind; I have invariably performed the operation at the time I have mentioned, and I have not, in any one instance, either seen an unfavourable result from it, considered as an operation, nor, indeed, a failure of the ultimate object—that is, the closure of the preternatural fissure. It has sometimes been said that children are liable to convulsions at this time, and that a considerable loss of blood may act seriously on them, so that they may die from the mere effect of the operation. This has not occurred in any case that has come within my observation; in other respects children, at the time I have mentioned, so far as the constitution and the powers by which injuries are repaired are concerned, are very favourably situated for the operation. If nothing unfavourable takes place, we find that the process of adhesion goes on favourably, that the sides of the wound unite readily, and that the operation succeeds very well. Out of the great number of cases which, by some accident or other, have come under my care, I may mention to you, that not a single failure has occurred.

Now the mode of performing this operation, or rather the mode of uniting the wound that is made in remedying this deficiency,

is in some respects singular; for exact contact of the sides of the wound is so important, and it is so likely that this contact would be deranged by the motions of the lips or some action of the features, unless we took some especial pains to keep the parts closely together, that we employ means of maintaining them united which are hardly resorted to in any other instance of simple incised wound—that is, we put a pin or needle, *a hare-lip pin* or needle, consisting of a silver stem with a steel point, through the sides of the wound, and we keep them united by subsequently winding a portion of silk or thread round the needle or needles (in case we employ two), which are thus put through the sides of the wound. It is possible that the wound made in this case might be united simply by sutures, or by the approximation, which we can effect as in the case of a wound of other parts, by adhesive plaister; however, we should run a good deal of risk in trusting to these means in this case; therefore I consider it better to employ the old and almost universally-practised means of uniting the wound by pins. In practising this operation on the subject, you first of all make a division of the lip, so as to represent hare-lip. [Mr. Lawrence here divided the lip.] This is exactly in the situation in which it is found in the natural state. Now in the natural hare-lip, the sides of this fissure are covered by the common integument connected with the mucous membrane that forms part of the lip; and the first object in the operation is to remove these edges, so as to bring them into the state of a recent wound. The question then is, what is the best mode of removing those edges? Now there has been a great controversy whether the edges of the fissure should be removed with scissors or the knife; and which is the most advantageous mode of doing this. I consider that the scissors are the most convenient, and that you will do it best with that kind which has knife edges. The ordinary kinds are ground with oblique edges; they are not made exactly as a knife, and they do not cut so smoothly; but scissors may be made in the same way that a knife is, and then you cut with great facility, without bruising the edges between the blades; and such scissors are the most convenient means for paring off the edges of a hare-lip. Now the removal of these edges is a process of some nicety, because, unless you make the two sides of the wound exactly alike both in length and breadth, you do not unite the lip so as to leave it perfectly even. It is a point of great consequence to have the line of boundary between the integuments and the red part of the lip exactly level, and unless you have the two sides of the fissure in the hare-lip exactly of the same length, you will find that this line will not be precisely level. You should, therefore, measure them before

the operation—perhaps put a dot or two of ink upon the parts, so as to have a clear direction in performing the operation. It is of great importance that you should determine the points of your operation in your own mind clearly beforehand, in order that you may have the two edges of the fissure precisely corresponding with each other. You are aware that when you have once begun the operation on a child, there is much blood effused; it is moving about in so unmanageable a way, and there is so much difficulty in handling the lip (which is very small in those young subjects), that unless you have perfectly determined all the points previously, you do not find it very easy to accomplish your purpose. Supposing, then, the deficiency and the proceeding hitherto to have been such as I have pointed out, it has usually been the practice to employ two hare-lip pins, and to put one just at the point where the red part of the lip joins the external integuments, and another near the upper angle of the wound; but in performing the operation on the young subject at the age I have mentioned—and I have always performed it thus early—I have invariably found it sufficient to use a single hare-lip pin, introducing it at the lower part of the fissure, near the red portion of the lip, and uniting the wound at the upper angle with a simple suture. One hare-lip pin and one suture I have always found to be the most advantageous mode of uniting the wound in those cases. The hare-lip pin consists of a hollow cylindrical portion of silver about the size of a common dressing-probe, and having a sharp steel point, by which you make an opening for the silver part to be carried through the soft portion of the lip. Now, as in using the hare-lip pin the object is to keep the whole surface of the wound in the lip in exact apposition, you will find it expedient to introduce the point at a considerable distance from the edge which you have cut, and to carry it very nearly through the whole thickness of the lip. Very commonly it has been said you should carry the hare-lip pin so as to bring it out at two-thirds from the depth of the anterior surface of the lip; but it is, perhaps, better to carry it nearer to the mucous surface, almost transfixing the lip. You must, however, bear this in mind—that the pin is to be carried in at some considerable distance from the edge of the incision, so that you may embrace a considerable thickness of parts for the application of the ligature; if you were to carry it in nearer to the edge, you would find that the edges would not unite behind, and that a considerable fissure would remain there. Now, in this case, here I introduce the pin so far from the edge of the incision that the ligature may act on a considerable extent of surface; that is the situation, [introducing it,] and if it is carried in



in this direction, you observe that it will go through the lip in such a manner as almost to reach to the mucous membrane. If I had carried it in merely as far as I now shew you, I should only have transfixed the skin; and when the ligature was applied the posterior part of the fissure would not have been held in contact. Of course you carry out the point of the pin again as far on the one side of the wound as you introduced it on the other. Now the hare-lip pin has been introduced in the proper way, and when this is done, the steel point may be removed. You observe it has been introduced so as to embrace nearly the whole thickness of the lip, and you will immediately see, when the ligature is put on, that it will bring the edges of the wound completely into contact. Having introduced the pin thus far, I take out with the forceps the steel point,—the silver part only being left in its situation. Then, in order to apply the ligature, you take a portion of silk, carry the two ends round each end of the pin, and turn them repeatedly in that direction, until you apply enough of it, and form a sufficient breadth to keep the edges of the wound in contact; you must also apply it sufficiently tight to keep the edges together, and at the same time you must not apply it so closely as to produce any degree of tension, when the inflammatory process which follows the operation comes on. Then having secured the pin with two or three turns of the silk, you can put in the simple suture, which I have mentioned, above, as being sufficient to enable you to dispense with the use of another pin. You must follow the same rule with respect to this suture, which I have mentioned to you as applicable to the introduction of the pin—that is, you must embrace a considerable portion of the substance of the lip with it, so as to bring the entire edges of the wound into contact. A simple ligature suits for this purpose. In this instance, however, which is the case of an adult, the single hare-lip pin is sufficient of itself to unite the edges of the wound. It would not be necessary to use two hare-lip pins in this case, and much less would it be necessary if it were the case of an infant. And in operating on young children, I have generally found it necessary to have some hare-lip pins suitable for them—that is, smaller than might be necessary in other instances, for the less prominent the ends of the pin are, the less probability is there of the thread or ends being disturbed. After making so many turns with the silk that it may occupy a considerable surface, you tie the edges of the ligature together by a simple knot, and thus finish the operation. You do not put anything further over the wound; in fact there is nothing wanted; you leave the wound as it remains now, and you find that you can remove the pin, and cut out the

simple ligature that is placed above it, about the fifth or sixth day, when you will usually find the wound completely united.

*Operations on the Mamma.*—I have spoken of the removal of tumors about the female breast, and I shall now just exemplify to you the simple operation which is to be performed on those occasions. If the integuments be in a sound state, your object in removing a tumor would be to leave as much of them as possible, because, by bringing the edges of the skin together after the operation, you can cover the wound that has been made, and in that way you very much abridge the time that is necessary for healing it. This rule, however, of course is not to be observed when you are operating in malignant diseases, and when you have any reason to suspect that the skin is involved in such disease; for the object of saving skin enough to enable you to close the wound, and to ensure its speedy union, is of much less consequence than that of removing every part to which any suspicion of disease can attach. In the case, therefore, of cancer, or any malignant disease, you are not to consider it an object to save as much skin as you can; on the contrary, the primary object there is to remove all the skin, as well as the other parts, that are at all involved in the disease. In performing the operation, then, of removing a tumor from the breast, you simply make a couple of incisions, which isolated the disease from the sound integuments; you then dissect down, so as to detach entirely the part you wish to remove, and take it away as quickly as you can. In respect to the directions of the incisions, you will, of course, be guided in some measure by the form of the tumor which you are to remove, and by the facility with which you can perform the operation generally. Now in the case of the breast, it is expedient to make the lower incision first, for if you make the upper incision first, blood flows over the part where you are to make the lower, so that you cannot see distinctly the course you are taking. In this case, therefore, as well as with regard to hare-lip (and indeed the same observation is applicable to all operations), you should just plan out in your own mind the object you have to accomplish, determining the steps you are to take in doing the operation before you commence it; and thus you will prepare yourself exactly for what is necessary, you will be ready to go through the various successive steps without any kind of embarrassment, and with as much expedition as possible. This is a rule applicable to all operations, and which is just as important to persons much in the habit of performing operations, as to those who are not. Unless this kind of previous reflection be made on the mode in which the different steps are to be taken in succession, embarrassment will

often arise, and you will not perform the operation well. Having made an incision the whole length of the tumor, and having cut through the adipose and cellular substance, you then detach the skin by a few strokes of the knife, so as just to expose the lower part of the tumor; having done that, make the upper incision with its extremities meeting those of the lower. This part of the operation you do quickly; it is merely a kind of rude dissection. The surface of the tumor is now isolated by these two incisions, and you may proceed either at the upper or lower edge to detach it entirely from the parts with which it is connected. This is accomplished by a few strokes of the knife; the tumor is supposed of course to be loosely, not firmly attached. Here, as I have done this, a considerable portion of the integument has been removed, and of course the edges of the wound cannot in this case be approximated; but if you perform the operation where it is not necessary to remove any of the skin—if you make a simple incision and turn back the flaps, the edges of the wound may afterwards be brought completely together.

*Taking up the Brachial Artery.*—I shall show you in the next place the operation of cutting down upon, and taking up, the brachial artery, in doing which, I shall exemplify the general course of proceeding we adopt in the operation for aneurism—the mode of laying bare the artery and passing a ligature round it for the purpose of tying it. I have already mentioned to you that the object of operation for aneurism is to tie a ligature round the artery, after having passed it under the vessel, in the easiest way that you can, that is, with as little detachment of the vessel from its surrounding connexions as the circumstances will admit of. Now the plan I have found best adapted for this purpose, is to employ an aneurism needle, which is narrow, sharp-pointed, and made as thin at the point and at the sides as is possible, without its having a cutting edge. The point of such a needle, when you have laid bare an artery, can be very easily carried under it, and in contact with it, and it will bring the ligature round the artery, so that you can carry it on in the situation necessary for tying it, without any more detachment of the vessel from its immediate connexions than is absolutely necessary for the application of the ligature. Of course it would not be proper to have the needle sharp-pointed and cutting, but you may have it made very thin although blunt, and such a needle will pass with very great ease round an artery, and will enable you to pass a ligature round it with a very inconsiderable detachment of the vessel; you thus tie the artery, leaving it with all its surrounding parts in the situation most favourable for those processes which are to go on after the ligature has been applied.

The brachial artery lies immediately on the inner side of the biceps flexor cubiti, and is there in company with the median nerve, and with the basilic and brachial veins. The basilic vein and the median nerve lie over the artery, that is, nearer to the skin; but the vessels and the nerve lie just upon the inner edge of the biceps, or perhaps a little covered by it; however, they are so near the surface, that in the living subject the pulsation of the artery can be easily felt. The incision will therefore go parallel to the edge of the biceps muscle. I should observe to you, that whether you are operating in this case or in the case of any other artery, it is advisable that you should make a free external cut; it is a matter of no consequence whether you divide an inch more or an inch less of the skin, so far as the pain with respect to cutting through the skin goes, but it is of very great importance as to the easy performance of the operation. Nothing is more embarrassing than to be poking and dissecting in a small wound to get at an artery where you are afraid of wounding some vessel, and where, in consequence of its being deep and low down, you find a difficulty in getting the ligature round it; now, almost all these circumstances you may avoid by making the external incision an inch longer; you might do it without any risk either of increasing the pain or affecting the result of the operation. You might, no doubt, take up the brachial artery with an incision of half the length of the one I here make [proceeding with the operation], but with less facility. There is a great advantage in operating on the living over the dead subject in the case of arteries, which is, that in the living subject you can put your finger into the wound and feel the vessel, which is an important guide. Here, however, is the edge of the biceps, so that we cannot be very far from the brachial artery in this case. Here is the median nerve, and of course the brachial artery must be very near it. Some persons, when they are taking up an artery, particularly a large one, are apt to suppose that they should proceed very cautiously with the knife as they come near to the artery; the truth is, the artery is pretty tough, and it requires rather a good cut to wound it, so that it is not necessary to be extremely cautious, so far as that goes. You may cut pretty near to the vessel, and scrape the cellular tissue around it, without injuring it; indeed you must make a pretty good cut, to cut through the coats of an artery; there is very little fear of doing any injury in a case of this kind. Then having exposed the artery with the edge of the end of the knife, you make a little incision on one side of it, so as to get room for putting in the end of the aneurism needle—sharp at the point, narrow, and with the eye close to the end, so that you can

get the ligature out when the end has just gone round the artery; now, having exposed the artery in this way, we shall find that the ligature will pass under it, I have no doubt, with great facility. You get the end of the needle under it in this way,—you gradually work it about, and then you see its point coming out on the other side. You see it makes its way with very little disturbance, and you do not want to detach the artery from its situation. You observe I have not done any thing to lift the artery up—I have not lifted it up with the finger and the thumb, it is only detached to an extent sufficient to admit of the needle and the ligature to pass round it. Here is the edge of the biceps muscle, here is the median nerve, and here is the brachial artery with the aneurism needle and ligature passed round it.

## OBSERVATIONS

ON

## FUNGUS HÆMATODES OF THE EYE.

By RICHARD MIDDLEMORE,

Assistant-Surgeon to the Birmingham Eye  
Infirmary.

[Continued from page 851.]

MR. LAWRENCE thinks there are many peculiar appearances of the eye not of a malignant nature, but so exactly resembling fungus hæmatodes, that it is almost impossible to distinguish them from it, and recommends the operation of extirpation of the eye-ball to be omitted in doubtful cases; but with our present knowledge of the characters of this disease, our acquaintance with the torture and destruction it entails if unarrested by art, and the mildness of the operation to be recommended, his objections can scarcely be allowed to be sufficiently important to deter us from the early employment of the only efficient and radical plan of treatment at present known.

The following are the only cases, the progress of which I have carefully watched, directed the treatment, and witnessed their close; but my professional friends, aware of my desire to investigate this subject, have furnished me with the notes of many others, and have most liberally afforded me many opportunities of seeing this disease in all its stages and forms. It is from the ample materials thus afforded me that I have derived my information upon this subject; and have had the great advan-

tage in the prosecution of my inquiries of listening to the opinions of others, and hearing my own views freely canvassed. The result of all investigation and discussion has strengthened my conviction of their accuracy, particularly as regards the nature and cause of the disease, and the superiority of the plan of treatment I shall presently recommend. It remains for time and experience to determine how far I am correct.

CASE I.—James Taylor, one month old, the fine healthy-looking child of robust parents, has a peculiar shining appearance of the right eye, which I noticed whilst examining the eyes in consequence of an attack of purulent ophthalmia: on viewing it attentively, it seemed to be situated at the bottom of the eye, to occupy only a small space, and to yield an extremely brilliant appearance; the iris was sluggish in its action, and the pupil rather large; but the sclerotica was not discoloured, nor was the eye-ball at all altered in figure. The mother of the infant said she had had many children before, all of whom were healthy, and that her baby only wanted my advice for the running of the eyes; and certainly, judging from appearances, no child could be in better health (with the exception of the ophthalmia), or in possession of a stronger constitution. I could not convince the woman of the importance of her child's disease, and the propriety of a trifling operation for its removal, and she accordingly left me under a belief that I wished to make her child the subject of some extraordinary experiment. In a few days I rode a considerable distance into the country, on purpose to make a second attempt to overcome the parent's scruples, but in vain; the father of the little patient himself told me, that no doctor in the world should hurt the poor child's eye. In a fortnight afterwards I heard of the child's death from small-pox, but was unable to obtain an examination.

It will be remarked that this infant was apparently strong and healthy, as were also its parents; that their former children had had no similar disease; that the morbid growth was small and limited to one point, and had produced no constitutional symptoms; and that the infant was only one month old.

CASE II.—William Foreman, six



months old, has several small slightly-elastic tumors beneath the scalp, untended with cutaneous discolouration; considerable enlargement at the front and upper part of each temple, and protrusion of each eye-ball. The child is generally drowsy, and becomes quite comatose when the temporal tumors are compressed. On examining the eyes, that on the left side appeared healthy, although evidently pushed forward by some substance behind it; the pupil of the right eye was exceedingly large, the iris inactive, and the crystalline lens slightly opaque, and pressed against the neural surface of the cornea by a yellow shining substance, of a rugged uneven appearance; the sclerotic was generally of a dark brown colour, and irregularly enlarged; the cornea attenuated, and so extended as to appear twice the size of that in the opposite organ. The mother says that her former children were quite healthy, and that the patient in question was also a fine strong child for many weeks after its birth; she does not remember that the infant has received any blow on the eye, but had remarked a peculiarity of appearance, as if something bright was in the eye (occasioned as she thought by the sun), before it enlarged, and long before the appearance of the swellings about the head; she further stated, that when four months old it had a fit in the night, and since that time has been getting gradually more drowsy, the eyes have been protruding, and the tumors of the scalp have been increasing in size, being prior to that period so small as almost to escape notice. In a few days the attenuated cornea gave way, allowing the evacuation of the lens (which was slightly diminished in size, and somewhat opaque), and the protrusion of a soft red fungus, which occasionally bled. Although the patient's sufferings were by this means slightly relieved, the irritation and discharge, joined to the occasional hæmorrhage, quickly exhausted its vital energies.

*Inspectio Cadaveris.*—On removing the scalp, several nodules of a medullary structure were observed, connected by cellular membrane to the pericranium; they were somewhat firmer than brain, and white and homogenous throughout. Brain slightly congested, with an additional quantity of serum in each lateral ventricle; at the back of the orbit on

each side, and covered by, or rather external to, the dura mater, was a reddish medullary mass, in some places of a deep red colour, surrounded by an irregularly-formed circle of a fainter appearance; the orbitor plate of the frontal bone was partially absorbed, and the remainder of it altered, as though partaking of the same morbid character as the surrounding parts. The bulk of the tumor in each orbit was about the size of a very small orange, connected by a transverse portion of the same diseased structure, which extended backwards, still covered by the dura mater (which was raised from the bones), as far as the anterior clinoid processes; and on the right side, to the petrous portion of the temporal bone. I could discover no trace of the optic nerve of the right side, except where it was united to the sclerotic; it was then a soft and reddish mass, to the ocular extremity of which was a similar substance, slightly altered by incipient mortification. The sclerotic coat appeared healthy, but the major part of its contents had sloughed away a few days before; indeed no part of the eye-ball remained, with the exception of the ruptured and attenuated cornea. The sclerotic in many places thin and sacculated, and the medullary and partially mortified mass attached to the extremity of the optic nerve.

*Chest.*—The heart, lungs, and pleura were healthy; many of the ribs on each side, as far as their cartilages, were red and swollen, and when cut into were found to be soft and pulpy, evidently approaching to the state of medullary change which has just been described as affecting the interior of the eye-ball and the bones of the orbit.

*Abdomen.*—Liver enlarged, and converted in many places into a medullary mass of a pale red colour; both kidneys had undergone the same kind of alteration, and were greatly enlarged; the mesenteric glands, although somewhat augmented in size, had not experienced much change of structure; the other viscera were moderately healthy.

This case presents a good illustration of the affection of the constitution by a local disease, and clearly exhibits the extent to which it may proceed, and the torment it may occasion, if unrelieved by timely-employed treatment. If this state of things were properly represented, what parent of common intelligence and humanity could refuse to permit

the performance of a simple operation, with the prospect of providing for their infant an escape from such painful and destructive ravages?

CASE III.—Edw. Eaves, six months old, a fine healthy-looking child, was brought to the infirmary on account of a shining appearance of the right eye, which was first noticed by its parents (and referred, as in the former case, to the sun shining upon the eye) when the infant was two months old, but has lately been much more distinctly observed; has enjoyed good health generally, but for the last month has been somewhat peevish and irritable.

*Appearance of the eye.*—Iris pushed against the cornea by the lens, which has partially lost its transparency, through which is seen deep in the eyeball an amber-coloured substance, which when viewed laterally has a remarkably brilliant appearance, and is traversed by a red vessel; the globe is irregularly enlarged, the pupil ample, the iris immovable, and vision quite destroyed.

The disease was immediately recognised, and a palliative plan of treatment adopted. As it advanced, the child became subject to convulsions; the eyeball increased in size, so as scarcely to be covered by its lids, the vessels of which were enormously distended; the pupil enlarged to nearly the dimensions of the cornea, so that a portion of the lens might be seen when the eye was viewed laterally; the cornea became attenuated from the pressure of the lens upon its neural surface; and the sclerótica studded with bluish projections, some of which at their apex seemed likely to burst. At this time sickness and severe convulsive attacks supervened, and deprived the infant of life, eleven months from its birth, and five from my first observance of the disease.

The post-mortem examination was restricted to the removal and inspection of the morbid organ. The optic nerve was enlarged, softened, and in some places of a red colour; the sclerótica attenuated, and the cornea increased in its superficies and extremely thin in texture, as though it had been stretched, or beaten out between two hard substances; the choroid was in many places pale; no appearance of the retina could be discovered, except around the optic nerve, where a membrane, bearing an indistinct resemblance to it, was seen. No aqueous humour could

be detected. The lens was a little diminished in size and transparency, its external surface being firmly pressed against the neural surface of the cornea, and its neural side pressed upon by the fungoid mass; the place of the vitreous humour was occupied by a reddish substance, of a firm consistence at its circumference, but nearly in a fluid state at its centre, a portion of which appeared to adhere to, or arise from a part of the retina near to the optic nerve; this redness was not, however, uniformly diffused, but in some situations resembled a clot of blood, around which the colour was fainter as it receded from the centre, until it assumed a perfectly white appearance.

It will be noticed that no outward evidences of a constitutional affection presented themselves in this instance; that the choroid was little changed; that neither the sclerótica, cornea, or crystalline lens, were at all affected; and that the retina had undergone generally so great a degeneracy, as not to be recognised except around the pedicular origin or attachment of the fungoid growth.

I have never yet seen fungus hæmatodes of the eye occur in an individual more than five years old, although many writers have related cases of its existence in adult and even advanced life; but if these cases be critically examined, it will be found, in the majority of instances, that they cannot properly be arranged among this class of diseases, and ought rather to be considered anomalous growths arising from accident, or some primitive disease of the brain; indeed if we examine some of the cases selected by Mr. Wardrop from the writings of various authors, we are surprised to find, amongst others, a variety of contradictory symptoms—such, for instance, as a flat state of the cornea, a sunk condition of the eye, a contracted pupil, a collapsed state of the eye-ball, &c. which would render it probable either that the symptoms were inaccurately stated, or that the disease was not properly fungus hæmatodes, and ought not, therefore, to be taken into consideration when endeavouring to procure a correct description of, and clear notions concerning, this malady.

It is probable, however, that occasionally it may proceed so slowly, as not to be noticed for two or three years, and at length only attract observation

by an accidental discovery of the loss of sight in the affected eye; in this way a child may be first presented for advice at a period much later than usual, but it would be obviously improper to consider this the period of the commencement of the disease; indeed, knowing how greatly it varies in its progress, we can scarcely give an approximation to a correct opinion about the time of its origin from merely observing its existence—that is, if we exclude that cause of its origin to which I shall presently advert.

It would be well to inquire why infants should be the chief, if not the only, sufferers from this malady? Mr. Wardrop seems inclined to believe that it frequently arises from local injury, as a fall or a blow upon the eye; but I have known it generally occur where no injury of such a nature had been sustained. We do not find a blow upon the eye followed by this disease in the adult; many children receive a blow upon the eye who are not afterwards affected with fungus hæmatodes; nor can we produce this affection by bruising or otherwise injuring the eyes of young animals; nor is it reasonable to suppose that such an action would be likely to be excited by a cause of such a nature. We cannot, therefore, with propriety, consider contusion the general cause of fungus hæmatodes of the eye.

Knowing how the productions of excited and altered action are varied by the age and constitution of the patient, the structure and functions of the part in which it takes place, and the peculiar nature of the stimulus, I have sometimes thought (and subsequent observations have tended to confirm this belief) that the stimulus of light might call into existence that particular change in the action of the vessels of the retina which may give rise to this kind of formation; but my experiments and observations upon this intricate subject only justify me in asserting the probability of the correctness of my opinion.

Can we limit the results of modified and excited action to any particular kind of formation? We see changes of structure, possessing every variety of character, induced either by a constitutional or local defect; we find morbid growths built up with astonishing rapidity, at other times slow in progress—now assuming a mild appearance, or suddenly taking on a most malignant

aspect; in short, such is the present state of our knowledge upon this subject, that until more successful observations develop its true nature, we must rest content with a belief that a local or constitutional defect may so vary and pervert the actions of parts, as to give rise to the production of every conceivable variety of adventitious formation; and that we are unacquainted with the essential nature of that insidious action which charges the constitution with the malignant principles of cancerous, medullary, and other morbid matters, and disposes it to divest itself of these hurtful imbuements by some local disposition.

I have stated that we sometimes find the disease limited to the eye, and at other times discover its existence in other parts. I do not know that the eye has ever been secondarily affected; on the contrary, its disease has appeared to precede and give rise to that altered state of system favourable to its production in other parts, as though the absorbents from the part primitively affected, by transmitting the elements of the morbid matter, infected the system generally. There is scarcely any part of the body which may not in the course of its progress become affected—the brain, the liver, the lungs, and indeed all but the very feebly organized textures may become involved. When it extends to the brain, we have a distinct set of symptoms: the restlessness and excitement soon become exchanged for depression and coma—the symptoms of course will be modified by the number and structure of the parts affected. When the disease is limited to the eye, we have local pain and irritation, which, as it advances, become aggravated, the pain then extending to the head, producing fever, restlessness, and in many instances frequent attacks of convulsions, until the patient is relieved by the rupture of the tunics confining the morbid growth; every symptom, indeed, would appear to point out the limitation of the disease, the constitutional symptoms being clearly referrible to the pain and irritation occasioned by the local malady.

The colour and consistence of fungus hæmatodes are extremely various, circumstances chiefly influenced by its duration or the admixture of effused blood. After the disease has existed for some time, its interior generally be-



comes softened, and it occasionally happens that the rupture of minute vessels, by blending their contents with the morbid mass, yields an appearance of redness not previously noticed. I do not think these circumstances are of any importance, for every shade of colour and grade of consistence proceed to the same fatal termination, if unchecked by treatment.

The cases I have detailed so fully point out the train of symptoms indicating the presence and locality of this disease at its commencement, and its destructive tendency if unrelieved by art, that I do not deem it necessary to insist upon the obvious propriety of instituting that plan of treatment which, whilst it relieves the patient from a long and painful period of suffering, holds out a cheering prospect of eventual recovery. The question is not shall we or shall we not remove the disease, but how shall it be removed.

In the absence of any definite notions concerning the cause, it is not surprising that fungus hæmatodes should be said to have its origin in any of the textures of the eye with the exception of the cornea and crystalline; if, however, the hint I have thrown out with regard to its origin should prove to be correct, we cannot admit the accuracy of this remark. In all the dissections I have made or assisted in making, and the preparations I have seen, where the disorganization had not proceeded so far as to confound and blend parts, I have satisfactorily made out the partial integrity of the choroid and cells of the vitreous humour, whilst the retina has been so altered as to render even its existence doubtful: sometimes the disease has appeared to originate in a pedicle, from a particular point of its surface (the choroid) being easily detached from the sclerotica behind it. Mr. Travers asserts that fungus hæmatodes may arise in any of the textures of the eye, with the exception of the crystalline and cornea; and has even declared that he has known it arise in the cellular membrane, between the layers of the sclerotica, and so distinctly describes the splitting of its layers in consequence of the increase of the morbid growth, that it is difficult to conceive how he could have been mistaken in reference to its situation. I must, however, confess my ignorance of any such an appearance, and feel much in-

clined to doubt the accuracy of his observation, not merely from the circumstance of its opposition to general opinion, but from a full conviction, the product of repeated and extensive observation and experiment, that it is contrary to the recognised laws which appear to regulate the origin and progress of malignant disease in general, that in the midst of vascular and highly vital structures, it should fix upon one comparatively lowly organized.

I have not often seen the superficial glands much affected; they have been in two instances slightly enlarged and tender, but it has not fallen to my lot to witness them changed into a medullary mass, or proceed to ulceration. Such an occurrence seldom takes place, and then only, as far as my observation extends, at the close of the disease.

I have not entered into the consideration of the many cases which may be found scattered through the various works of former times, under the name of bleeding tumor of the eye, bleeding fungus, &c. for it would be quite impossible to arrange many of them under any known definition of disease; and it did not appear to me at all likely to render my observations intelligible or useful to mix together cases of melanosis, and a confused mass of anomalous productions, whilst treating specifically of fungus hæmatodes.

On referring to the works of our old surgical writers and the periodicals of former days, I have discovered many examples of this disease, but they are in nearly every instance so vaguely and inaccurately described, from the comparatively imperfect state of anatomical knowledge, and the little interest taken in morbid anatomy, that there is very little information to be derived from their perusal, still less any assistance in deciding upon its causes, or assigning its seat; we may indeed presume that such a disease existed, but cannot derive any more important aid from their descriptions of, and reasoning upon, such cases.

[To be continued.]

URTICARIA—IMPORTANCE OF  
DIET.

*To the Editor of the London Medical Gazette.*

21, Lower Belgrave-Place,  
August 14, 1889.

SIR,

I HAVE long been impressed with the opinion that, in the treatment of disease in this country, there exists, too generally, a most palpable neglect of the application of the principles constituting that department of therapeutics which has received the appellation of hygieni. Having lately met with a most striking instance, among many others, confirmatory of this belief, I take the liberty of transmitting to you the particulars of the case which has more especially elicited these remarks.

I was consulted about six weeks ago by a lady relative to her son, a child of two years and nine months old, who had been troubled, for upwards of thirteen months, with chronic urticaria (the *urticaria evanida* of Dr. Willan).

This child would have been considered, in the eyes of persons unacquainted with disease, as being exceedingly healthy; perhaps even the very common epithet of his being "the very picture of health" might have been deemed applicable to his appearance; but only a slight glance, taken by any individual accustomed to mark the traces of disease in infancy, would have been sufficient to satisfy him that, in this instance, the application of such a title would have been decidedly erroneous. The child was of a corpulent habit and sanguine temperament, but his skin was dry, rough, and on his face it was marked by irregular streaks; his eyes were dull, the albuginea slightly tinged with yellow; his tongue was covered with a yellowish-white fur towards the root—from the centre forwards it was more white and moist; his breath was fetid; his circulation was not much accelerated; his respiration, however, was slightly hurried, from the presence of a little irritating cough, dependent, I conceived, upon the state of his stomach. His bowels were exceedingly irregular, having sometimes no evacuations for two or three days at a time, and when they occurred, the matter discharged was of an excessively fetid nature, clayey, and for the most part accompa-

nied by the passage of much flatus. He had also frequent acid eructations; his appetite was described to be, generally speaking, good; his disposition lively; his temper remarkably good, except occasionally, when, from the irritation of the affection under which he laboured, he was rendered peevish and restless.

The eruption first made its appearance rather more than fourteen months ago, while the family was residing in the country. His diet, at that time, was totally unrestricted—he was permitted to eat any thing he desired; in fact, even at that early age (nineteen months), he was allowed to partake of whatever his parents ate. The disease was referred, by the medical gentleman who was consulted, to teething. Not the most distant hints were given as to the propriety of regulating his diet, nor were those articles so much as named which would be best calculated for him; on the contrary, when his mother inquired if there were not any particular description of food that would be better adapted for the infant while indisposed, she was informed that her child was so strong he might eat any thing. After this mode of proceeding had been going on for some time, it became necessary for the family to remove to town. No alteration, however, was made in the child's diet, and no change, as might naturally be supposed, took place in the disease. The eruption still continued to make its appearance every night; in fact, not half an hour elapsed, after his being put into bed, before the skin of his back, arms, thighs, and legs, was covered with the characteristic wheals. The bases of some of these were slightly inflamed, although they were not so generally. The irritation which they produced was intense; for, from the time that the eruption made its appearance until the next morning, he was almost incessantly scratching himself—thereby adding fuel to the fire.

Yet these evils were not prevented, or alleviated, even by the professional gentlemen consulted in London (and these consisted both of physicians and general practitioners); one only of them, according to the account which I received, having proposed to her the very simple, and, it would have been thought on this occasion, the very natural question, what articles constituted the child's diet? Let me not be supposed to insinuate

that there had been any inattention to the administration of medicines; quite the contrary. The medical treatment was highly judicious—it was, indeed, faultless. Warm and sulphur-baths were repeatedly employed; alterative and laxative medicines were prescribed in abundance—to so great an extent, it would appear, that the lady informed me she was almost tired of trying any more medicine, her child had taken so much. Such, sir, were the facts of which I was put in possession on first seeing the subject of this case, and from them I became convinced that there was mismanagement in his diet. I determined to get some insight into this, and therefore inquired upon what description of food he was usually fed; what, for instance, had he had for dinner that day—what the previous day? She answered my inquiries by stating that he generally dined with the family, and partook of whatever was upon the table. Conceiving “that vegetables were particularly wholesome” (this was her expression) for him, she never prevented him from having as much as he desired; that day, his dinner had consisted entirely of asparagus; the previous day he had eaten very heartily of the same vegetable; and two days prior, *even she* had at length been under the necessity of prohibiting him from continuing to eat sea-kail, he had eaten so much of it. She added, that he was exceedingly fond of potatoes, and was always very happy when his father would allow him to have some wine. I stated to her my opinion of her child’s diet; that it was perfectly incompatible with recovery from the disease under which he was labouring, and, moreover, totally unsuited to his years. I recommended the adoption of an entirely different system, and strongly urged the *necessity* (not merely the *propriety*) of discontinuing the use of all vinous liquors, of vegetables in their green state, and soups into the composition of which these entered; and of substituting farinaceous and light animal food. He was ordered to be put three times a week into a warm salt-water bath, occasionally alternating these with a bath of the nitro-muriatic acid. A dose of the hydrargyrum. cretâ, with a laxative mixture, containing the tart. potass. carbon. soda, and pulv. ipecac. were prescribed; and, instead of increasing the cathartic power of

the medicine, to meet the torpor which existed to a very great degree in the intestinal canal, this same mixture was continued until, by steady perseverance in its use, his bowels became regularly moved once, and sometimes twice, every day. It was likewise suggested, that, when he was taken out of the bath, his whole body, but especially his abdomen, after being dried, should be well rubbed with the hand, or a dry soft cloth. A fortnight had not elapsed before I had the satisfaction to find that a very great improvement had taken place in my little patient; and I am now able to state, that for the last three weeks he has been almost entirely free from a complaint, under the irritating effects of which he had laboured for fourteen months almost incessantly. His appearance is now natural; his skin is soft and smooth; his eyes bright; the colour of his cheeks clear and uniform; his tongue clean; bowels so far improved that, without the aid of any laxative medicine for the last ten days, they have been regularly open every day; and, above all, for whole nights successively does he sleep, without being disturbed by the appearance of the eruption, which was formerly so great a source of annoyance not only to himself but to all about him.

I fear, sir, I have already encroached too far upon the columns of your journal; but in requesting the insertion of this communication, it has not been with the view of attracting attention to the disease, which is of sufficiently common occurrence, and when early met by appropriate means, in most instances is found sufficiently tractable; but to the fact of the speedy change produced by having had recourse to those measures which, we are instructed by the principles of therapeutics, are adapted to the particular affection. But, sir, while I am free to confess the unimportant nature of the disease, with the case of which I have taken the liberty of troubling you, nevertheless I must agree with the *late*\* venerable Professor of Clinical Surgery in the University of Edinburgh (emphatically styled by Sir A. Cooper the father of that form of instruction in Great Britain)—I allude to Mr. Russell—that it is not from the study of the most extra-

\* We are happy to inform our correspondent that Mr. Russell still lives, and fills the chair of clinical surgery.—E. G.



ordinary, most severe, and consequently proportionably the most rare instances of disease, that information alone is to be derived; but that from the most inconsiderable, and perhaps the most common cases of derangement of the economy, many lessons of the greatest importance, and of the most lasting benefit to the student, are to be acquired. I consider it deeply to be regretted that, from the particular situation in which a very large proportion of the medical profession is placed in this country, and from the system of education adopted to meet these circumstances, while the greatest care is taken to instruct medical pupils in the treatment of disease by medical agents, scarcely any is conceived to be necessary in pointing out to them the method of preventing disease altogether, or of alleviating it by hygienic means. In establishing the correctness of this statement, let me only refer to the fact—how very few of the hundreds of pupils who daily walk through the wards of hospitals would, if interrogated, be able to describe the nature of the diet of those patients for whom they listen with attention to hear the medicines prescribed; how few, I say, would be able to inform you what constituted the low diet of the recently-admitted patient labouring under acute inflammation—or the full diet upon which he is subsequently placed when perfectly convalescent, and about to be discharged cured. As the celebrated Mr. Hunter said that it was, in his opinion, much more creditable to a surgeon to obviate entirely the necessity for the performance of an operation, than to perform it with the greatest dexterity, so I think that it would redound much more to the reputation of medical practitioners generally, did they direct more of their attention to the prevention of disease by regulation of diet, regimen, &c. than to the achievement of speedy and miraculous cures by the assistance of medicines.

On the effects of the unfortunate predilection which exists for the administration of large quantities and often ill-timed medicines, I shall conclude, by quoting a passage from the work of a very excellent author on the subject, whose utility I have endeavoured to advocate—that of the science of hygiene—a science perhaps too emphatically de-

scribed by the great J. J. Rousseau as “la seule partie utile de la médecine.” Mongellaz, speaking of medicines unseasonably administered, says, “Si la nature n’était jamais contrariée dans ses admirables opérations, ni paralysée dans ses ressources infinies, combien on verrait de constitutions débiles se fortifier avec le tems, de difformités et de lésions diverses disparaître d’elles-mêmes!—Combien de maladies resteraient simples et curables, qui deviennent compliquées et mortelles! Combien de fois la nature n’est elle pas obligée de lutter et contre la maladie et contre le remède! Combien ne doivent qu’à ses efforts prolongés une vie payée chèrement au droguiste ou à l’apothicaire!”—*Vide l’Hygiène, Discours Preliminaire*, p. 16. Par S. J. Mougelaz, 1828.

It was my intention, sir, to have added some remarks upon another subject, to which I conceive sufficient attention is not paid in the treatment of disease in this country—I mean the appearance of the evacuations from the bowels; but as this article has already very far exceeded the extent which I originally intended, I shall be prevented from touching upon a point, the consideration of which would itself have required considerable space. I shall, therefore, subscribe myself,

Sir, your very obedient servant,

FRANCIS BADGLEY, Surgeon.

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#### CURIOUS CASE OF URINARY CALCULUS.

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*To the Editor of the London Medical Gazette.*

Glasgow, August 20, 1830.

SIR,

As the following case is, in many respects, of an unusual and puzzling nature, I request that you will give it as early an insertion as possible in your useful and ably-conducted periodical. If any of your correspondents would take the trouble to answer the queries annexed, it would confer a favour on,

Sir,

Your most obedient servant,

M. S. BUCHANAN, M.D.

Surgeon to the Royal Infirmary.

T. S., aged 17, a gentleman's servant, was admitted a patient, under my

care, into the Infirmary, on the 11th of August last. At that time a stone of considerable size could be felt in the urethra, a few lines anterior to the bulb. It had advanced from the bladder to this situation about a fortnight previous to his admission, and now, from its position, caused most excruciating pain. He stated, that from his infancy he had laboured under symptoms unequivocally indicating stone in the bladder, which had become of late so insupportable that he, with much reluctance, consented to be sounded. This operation was repeated, with great care, by several most intelligent surgeons in this city some months previous to his admission, without any stone being detected; and various means were also adopted the fortnight prior to the 11th instant, to get the stone dislodged from its situation in the urethra, by the introduction of catheters, bougies, &c. of the largest size, to the spot where it seemed sacculated; and also by trial of various kinds of urethral forceps, assisted by the warm-bath and anodynes, but all to no purpose.

The gentlemen who met in consultation on his admission were so convinced that no further trials of the above kind would succeed, that he was immediately placed on the operating table, secured as for lithotomy, a grooved staff introduced as far as the stone, and with one stroke of the knife the urethra was incised to the proper extent, and the stone extracted.

The operation was the affair of a moment, and was so bloodless and free of pain, that the sufferer was astonished so much had been previously given him, as he thought unnecessarily. The stone measured two inches and eight lines in its largest circumference, and one inch and ten lines in its smallest: it was convex on its one side, and flat on the opposite, with a small nodule in the centre of this last, indicating that it was the smaller segment merely of a larger stone, which must still be in the bladder. This was made more evident, not only from the very sharp edge of this plain surface, (which had very much the appearance of having been recently broken), but also from the concentric layers of lithic acid which were observed when sawn through its largest diameter by the lathe. On the 14th the wound in the perineum was completely healed, and no symp-

toms of calculus remained. He has been frequently sounded since, and on Wednesday last Mr. Costello, the lithotritist, after his oration in the amphitheatre, (which with much urbanity and frankness he volunteered,) again sounded him, but no stone could be found.

*Query 1st.* Is there any instance on record in which a stone of such dimensions was passed thus far in the urethra from the bladder?

2d. In what manner shall we account for the section or fracture of this stone in the bladder, no instrument having ever detected it till its exit from this organ?

3d. Why is the remaining larger half unable to be detected by the most careful sounding, as the smaller was, previously to its passing into the urethra?

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#### COMMUNICATION BETWEEN THE VENTRICLES OF THE HEART.

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*To the Editor of the London Medical Gazette.*

SIR,

THE following case fell under my more particular notice within the passed three months; and as it possesses some remarkable features, it may possibly be considered worthy of a place in your Gazette. Should this be your estimate of it, I shall feel obliged by your giving it an early introduction.

I am, Sir,

Your obedient servant,

JOHN MARSHALL.

Wallingford, Berks,  
July 1830.

— Perkins, æt. 23, the son of a publican at Cholsey, a village in this neighbourhood. The first time I saw him was about two years ago; I was then casually passing through the village, but my attention was arrested by his remarkable appearance. He was of a spare form, and his face and hands looked as if they had been tinged with the juice of elderberries. Some months after I called at his house, and made a more particular inquiry into the nature of his disease. He was very shy, and reluctant to answer questions, but I collected the following information from his parents.

From his birth his skin was of a purple hue ; during his infancy his respiration was short and hurried ; and as he grew older, he could never join in the sports of other children, the slightest exertion being always followed by such distressing oppression at the chest as to threaten immediate suffocation. He passed through the various diseases of childhood without any unusual suffering. At 14 years of age his father was desirous to put him to service, but the distress in his breathing being the inevitable consequence of the most trifling effort, he was compelled to remain at home, employing himself occasionally with a little light work about the house. The opinion and advice of several medical men had been taken on his case, and amongst others, Mr. Tuckwell, of Oxford, saw him. It was the general opinion that some direct communication existed between the right and left cavities of the heart. At my visit, I found him cold, with a small, frequent, but not intermitting pulse. He complained of uneasy sensations in the region of the heart, and the least exertion was followed by great oppression in breathing, and a sense of suffocation.

About two months before his death, in June last, I was requested to visit Perkins by the surgeon who usually attended him. He was now dropsical, the abdomen being enormously distended, and the thighs and legs greatly swollen ; his breathing was so much oppressed that he seemed on the verge of suffocation,—supported in a chair with pillows, being incapable of lying on a bed. As various remedies, with a view to carry off the water, had been long and unsuccessfully employed, I proposed and performed the operation of paracentesis abdominis, drawing off four gallons and a half. Although no ultimate benefit could be expected from it, the poor fellow was much relieved by the operation, and for more than a fortnight enjoyed comparative comfort. The water, however, soon began to accumulate again, and in six weeks he was as full as before, but declined submitting to the operation a second time. He now trusted himself to the prescriptions of a woman in the neighbourhood.

Ten days after my last visit to him he became much worse, and on the third day died.

After much difficulty, permission to

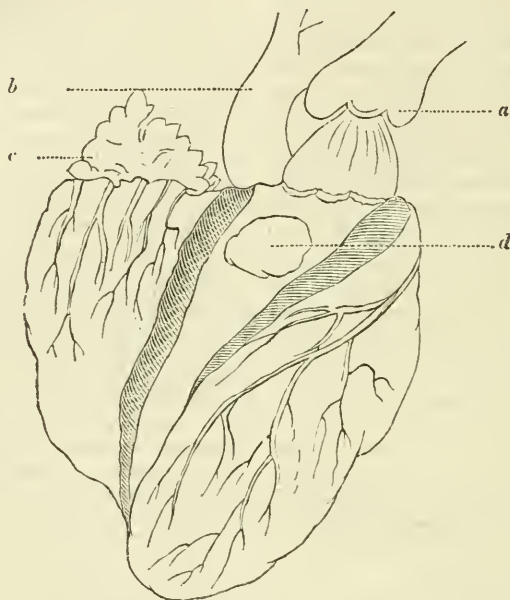
inspect the body was obtained from the parents, but this was not given until a promise was made that no part of the body should be taken away, and three persons were stationed in the apartment to see that all was fair. I was most unfortunately prevented from inspecting the body myself: this, however, was performed by my eldest son, and the following is his account of it.

“ Having previously tapped the abdomen, and drawn off five gallons of water, I opened the thorax ; the pericardium moved freely over the surface of the heart, and contained only a natural quantity of lubricating fluid. The heart was much enlarged, and I carefully removed it for more convenient examination ; the right auricle was large, but natural ; it was evident there had been a foramen ovale, but it was perfectly closed. On opening the right ventricle I was surprised at finding an aperture in the septum ventricularum, an inch in diameter ; it was situated a little below and on one side of the spot where the pulmonary artery originates. This opening was annular, the margin thickened and polished ; it was obviously a congenital malformation, and produced neither by laceration nor disease. The semilunar valves of the pulmonary artery were shrivelled, and apparently useless, but not ossified. About the space of an inch above these valves the artery was contracted, so as to form a complete stricture, and this a *bony* stricture, which could only allow of the introduction of a substance the size of a goose-quill. The coats of the artery above the stricture were very thin, and formed a sort of sac, as represented in the drawing. The ventricles were equal in thickness and strength of muscular fibre ; the pulmonary veins and the left auricle were very much dwindled ; the left ventricle, also, was smaller in capacity than is natural, but its structure was unimpaired. The aorta arose naturally, and its valves were healthy ; the lungs small and black from the blood they contained, but not diseased.”

Time and circumstances prevented an examination of the abdomen, however desirable it might have been ; and all solicitations to be allowed to preserve the morbid parts were utterly fruitless : indeed, so great was their dread lest an attempt should be made to raise the body—the case of poor Perkins having



long been considered a rare one—that his friends expressed their determination to watch the grave for a fortnight after his interment.



*a* Pulmonary artery laid open, to shew the stricture and the sacculated appearance behind it.

*b* Aorta.

*c* Right auricle.

*d* Opening in the septum ventriculorum.

## MEDICAL GAZETTE.

*Saturday, September 4, 1830.*

“*Licet omnibus, licet etiam mihi, dignitatem Artis Medicæ tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso.*”—CICERO.

### MALPRACTICE—CASE OF MISS CASHIN.

WHEN we wrote the observations contained in our last on the dreadful example of malpractice which has recently attracted so much attention, we had no idea that they would go forth to the world without the decision of the jury, so little did we anticipate the extent to which an artful counsel, and an imbecile

coroner, could protract the discussion of the plainest question. The verdict—“manslaughter”—has since been returned, but not till after the court had met five successive days in solemn debate upon a point with respect to which every man of common sense had made up his mind after the evidence of Mrs. Roddis and Mr. Brodie had been given.

Never, probably, on any former occasion was the necessity of having efficient and intelligent men to fill the office of Coroner more unequivocally evinced. Mr. Stirling, a highly respectable man, but much advanced in years, presided over the court in appearance, but not in fact—using little or no control over its proceedings, guided by no apparent principle, but suffering any one who

chose to take part in the discussion—committing the examination of the body to the hands of persons whose presence was accidental, and whose names were not calculated to give any weight to their opinions\*: brow-beaten by the counsel, and disregarded by all, he presented a mortifying specimen of weakness and incapacity. At his right hand sat Mr. Adolphus, exercising an influence apparently little short of terror over the coroner; while towards the jury he conducted himself with the vulgar insolence of a bully. It appeared as if he had felt that they had made up their minds “touching the cause of the death of Miss Catherine Cashin;” that, in fact, there was but one verdict which they could return, and that his only chance of serving his client was to call a number of persons who, having been the dupes of Mr. Long, would therefore be anxious to give such evidence as should make an impression in his favour, and afford some apparent justification of their own implicit belief in his extraordinary powers. Thus might he hope, perhaps, to weary the jury into a mitigated verdict—and, at all events, to procure such testimonies in Mr. Long’s favour as might prove some counterpoise against the injury which the case itself was calculated to inflict upon him. Never did we see the pettifogging lawyer in such perfection—totally regardless of every feeling of propriety or decency, and hardened against the approach of shame. Once, when met by a general hiss for some disgusting expressions which fell from him, he only bestowed on those present a grin of defiance, and some epithets borrowed from the vocabulary of Billingsgate.

On a former occasion we gave (see our last number) the evidence of the first three days—for what remains we must refer to the public papers, partly because it is

too lengthy for our pages, but more particularly because it had nothing whatever to do with the case under consideration. A long file of volunteers from Harley-Street was marched down, to overwhelm the jury by the extraordinary, and all but miraculous cures, which had been effected on themselves and their friends; and this was admitted as evidence before a court assembled to inquire into the cause of death in one particular instance. It is quite obvious that if witnesses were called to prove that Mr. Long had prescribed for them with advantage, by parity of reasoning, others ought to have been admitted who had used his remedies without benefit, or who had been injured by them; and even as it was, the investigation became changed from an inquest on the body of Miss Cashin into a discussion of Mr. Long’s general qualifications as a practitioner.

We have already given the amusing evidence of Sir Francis Burdett, and of the others it is enough to say generally that they betrayed such a degree of weakness and credulity as entirely to destroy the weight which might otherwise have been attached to their testimony. For example, most of them maintained that the lotion used by Mr. Long only produced its rubifacient effects when applied over parts which were the seat of disease, forgetting that in the unfortunate young lady whose case had given rise to the inquiry, sloughing had followed, though there was no disease beneath. Miss Matilda Christie swore, that since her recovery Mr. Long had applied the lotion on her back—but behold it is now, with regard to her, innocuous as water. The Marchioness of Ormond washes her hands in the same liquid that blisters her children’s backs—and finds it an agreeable cosmetic. Nay, Mrs. Ottley used it as an eye-wash without any unpleasant effects; and another lady, whose name we forget, is

\* We allude to those present at the first examination.

in the habit of rinsing her mouth with it every morning. A still more curious fact was mentioned by Mr. Abington, who informed the jury that when *he* applied the lotion it produced no effect; though he used it for three successive days, the parts remained "perfectly sound;" but no sooner did Mr. Long give his magic touch to the embrocation—no sooner did he apply it with his own hand than its influence commenced, and in "twenty minutes pustules were produced." Yet these confiding ladies, and this sagacious gentleman, swore to their belief that the embrocation used on all these occasions was the same! It is, in fact, perfectly apparent that there is much of the common juggler about Mr. Long, and that he practises *legere-de-main* as well as medicine, changing the bottles, sponges, or whatever else may contain his various applications, and making these innocent souls believe, that the difference in the effects depends on whether there be or be not "acid matter" in the part.

Another curious discovery elicited by the evidence of his own witnesses, was, that Mr. Long's patients were in the habit of receiving presents,—such as wine, tea, and similar articles. One lady admitted that she had carried home some tea—denying, indeed, that she herself had taken any wine, but declaring on her oath that she had known ladies take away several bottles at a time!! We have heard—and this evidence renders the circumstance not improbable,—that young women, unaccustomed to this "system"—what between rubbing behind the screen, and drinking before it, had been brought into a state which rendered it necessary suddenly to discontinue the administration of this combination of stimulants.

Miss Penelope Smyth, a very pretty simpering girl, from the same part of Ireland as Mr. Long, and a thorough

going witness in his favour, deposed on oath that he had pursued his education in Dublin, and attended lectures on anatomy, but she did not know whether it was at a painting school or not; in fact, on cross-examination it appeared that she resided at Doneraile, in the county of Cork, at the time alluded to! Yet on this slender foundation did Mr. Stirling, in his charge to the Jury, represent Mr. Long as having received a medical education: "He attended," said the Coroner, "anatomical lectures—not merely drawings of anatomical figures, but actual lectures—*surgical* lectures on that head." We defy Mr. Stirling to shew throughout the whole of the evidence a single syllable to justify this most unwarrantable assertion, made in direct opposition to known and acknowledged facts.

Such were some of the extraordinary statements and admissions made by Mr. Long's witnesses. But it will, perhaps, be asked, was there nothing more to the point than this—were no cures really effected by him—no foundation shewn on which to ground his pretensions? We answer, there was not. Several—perhaps six or eight persons—said that they had laboured under complaints which had been declared to be incurable, but in almost all of these, the blind credulity of the parties—the mis-statements subsequently contradicted, as in the case of Mrs. Sharp\*—the strong suspicion of having been laid under obligation (to use no stronger expression), as with the lady who had received presents of tea—and, finally, the undisguised manifestation of the witnesses being partizans of Mr. Long; all these circumstances tended to throw an air of doubt over the fidelity of their statements. Keeping this in mind, there remain but very few cases, and these unattended with any circumstances calculated to alter our opinion, for scarcely in one of

\* See Sir A. Carlisle's Letters in the Times.



them was there any proof of the practitioners having really entertained the sentiments attributed to them—in scarcely any were the names of the former attendants given—and in still fewer examples did they prove to have been men of any note in their profession. We doubt not, and never have doubted, that a certain proportion of those who go to Harley-Street, come back relieved or cured: there are many tedious chronic cases in which rubifacients, diligently applied in the manner practised by him, can scarcely fail to be of service, nor is there any medical man, who has been but a few years in practice, who could not without difficulty muster a far greater number of persons to swear they had been cured by him after others had failed to relieve them. A difference in the state and progress of the disease will account for this in a vast number of cases without it being necessary to attribute the recovery to any superiority of skill—but this is a point which the public do not, and, perhaps, cannot fully understand.

The effect, however, of all this irrelevant evidence on the jury is sufficiently shewn by the verdict—one which, considering the chicanery of Mr. Adolphus—his contemptible effort to raise the prejudices of John Bull by the cry of “conspiracy,” together with the submissive acquiescence and one-sided charge of the coroner, we must say is highly creditable to their good sense. The charge of the Coroner, indeed, is the only part of these proceedings which we have felt it to be our duty to insert. It is an ample justification of the strongest remarks we have made regarding the part he took on this occasion. He attributes much, if not all, the mischief to the application of a poultice, without “the knowledge or authority of the doctor,”—that is, of Mr. Long—while Mr. Brodie’s greater insight into the state of the back is at-

tributed to his having been able literally “to look deeper into it,” in consequence of the said poultice having removed the external surface or crust, which Mr. Stirling seems to think ought to have been suffered to remain, in accordance with Mr. Long’s “system.”

No one can peruse the account of these proceedings without being very forcibly struck with the disgraceful manner in which the business of the inquest was conducted—a circumstance to be attributed chiefly to the impudence of the counsel and the incapacity of the coroner, but partly also—we regret to say—to the injudicious, if not impertinent, interference of some members of our own profession. Scenes took place which more resembled what might have been expected in a bear-garden than in a court of justice—the riot sometimes prevailing for a quarter of an hour together. In vain did the foreman of the jury read a paper stating that they were *unanimously* of opinion that it was useless to pursue the inquiry any farther, as they were assembled, “not to inquire into the success of Mr. Long’s mode of practice, but to ascertain the circumstances which had produced the death of Miss Cashin.” Still did the coroner yield to the blustering of Mr. Adolphus, and suffer him to proceed. And here let us allude to Mr. Wakley: no one will suspect us of being influenced by any other motive than a sense of justice in praising this individual; we have no hesitation, therefore, in expressing our entire approbation of the manner in which he conducted himself throughout;—his behaviour presenting, in point of temper and propriety, a striking contrast to that of his antagonist, and, in point of judgment, a measureless superiority over some of those who made themselves conspicuous—and conspicuously ridiculous, on the same side. Mr. Wakley, for once, appeared on the right side, and exerted himself in supporting the respectability of the profes-

sion—something so unwonted, that the circumstance naturally attracts attention from its novelty.

But we have a more serious charge to bring against both the Coroner and the Counsel, and that is, of having grossly misrepresented the law. That Mr. Adolphus should have done this is nothing extraordinary—he was sent there to extricate his client at all hazards: that the coroner should have done so, we can only attribute to ignorance; and this tends, among other things, to convince us with how scanty a knowledge of the law his office may be filled.

It was stated to the jury that any man, though not of the medical profession, might legally undertake to cure a disease—in other words, might practise medicine, provided he previously explained to the parties what he proposed to do, leaving it at their option to submit to his treatment or not. Now this position of Mr. Adolphus is open to two rather serious objections—first, it is not true that any man can legally practise as assumed; and, secondly, if it were so, the case would not apply to Mr. Long, who it is notorious does not explain the nature of his remedies, so as to afford his patients an opportunity of using their own discretion—if they happen to have any.

The coroner again said, with regard to Mr. Long's remedies, "that if they were administered with a good intention, and not at random with a culpable disregard for the lives of his majesty's subjects, a man ought not to be charged criminally;" and farther, he expressly gave it as his opinion, "that there had not been sufficient made out to make Mr. Long criminally responsible." Lord Ellenborough, however, will probably be regarded as quite as good an authority as Mr. Stirling, and he, in a case which came before him, said "that if *medical men*, properly instructed, used all due diligence, and exercised

the best means they were possessed of, for the benefit of their patients, and failed in their endeavours, they ought not to be called before a court of judicature to answer for their conduct." But, he added, "that if they practised without having duly qualified themselves by previous experience and study, and death ensued from their practice, they would be liable to prosecution for manslaughter, as having presumptuously undertaken an office on which the life or death of an individual must depend, without having properly fitted themselves to execute it."

Thus it is quite clear that Lord Ellenborough made a great distinction between the accidents which are simply unfortunate and those which arise from presumptuous ignorance. To which of these the present case belongs, no man in his senses can doubt; and here, for the present, we take our leave of the subject.

Mr. Long must stand his trial, but almost as a matter of course will undergo no penalty—owing to the imperfection of the law.

#### STATE OF THE BACK IN THE CASE OF MISS CASHIN.

WE mentioned last week that the Jury, empannelled on the case of Miss Cashin, had been somewhat puzzled with regard to the effects which had been produced by Mr. Long's embrocation, in consequence of Dr. Alexander Thomson deposing on oath that there was no slough, Mr. Brodie having previously stated that sloughing had taken place. These circumstances led Mr. Brodie to address the following letter to Dr. Thomson:—

"16, Saville-Row, Aug. 25.

"Dear Sir,—Will you be good enough to tell me, for my own information—

"1st. Whether you discovered any further morbid appearance in your second examination of Miss Cashin's body?

"2dly. Whether the turgid state of the vessels of the mucous membrane of

the stomach which you observed in the first examination was more than might be expected to exist where, from any cause, the patient had been affected with long-continued retching and vomiting?

"If I understood you rightly yesterday, you found, on examining the discoloured skin of the back, that it was in such a state that the patient could not have recovered (even if she had not sunk at the time she did) without a large portion of it being thrown off as a dead substance, leaving an ulcer to heal by granulations afterwards.

"Now this is all that I intended to express when I said that there was a slough on the back, and I believe that others use the word in the same manner. Will it not be better to offer some explanation to the Coroner and Jury on this point, as they will otherwise be liable to be perplexed by thinking there is a difference of opinion between you and me, when in reality there is no difference at all?—Believe me, yours truly,

"B. C. BRODIE."

On two subsequent days, various explanations were offered by Dr. Thomson, chiefly in answer to questions from the jury, but they were not at all clear or satisfactory. On the last day of the inquest the following letter from Mr. Brodie to the coroner was read in the court.

"16, Saville-Row, Aug. 30.

"Sir,—I am informed that a question has arisen as to the meaning of an expression which I used in giving evidence on the case of the late Miss Cashin, and I therefore take the liberty of troubling you with this letter. Perhaps you will see no objection to its being read to the Jury.

"When I said that there was a slough on the back, I meant that a portion of the skin was dead, or mortified. I believe that this is the ordinary acceptance of the term, and that other surgeons, as well as myself, consider a dead part to be a slough, whether it remains attached to the living parts in the neighbourhood, or is separated from them.

"I beg to add, that I have no reason to believe that either you or the jury misunderstood what I said on the subject, at the time of my evidence being given.—I have the honour to be, Sir,

"Your obedient servant,

"B. C. BRODIE."

"— Stirling, Esq."

We are far from charging Dr. Thomson with wilful misrepresentation; but it is quite evident that in *voluntarily* coming forward on this occasion he has formed a very wrong estimate of his own qualifications. Had his appearance at the Inquest been compulsory, we should have regarded it as his misfortune, and dealt more gently with him, but as he has put himself so prominently forward, he must, with the notoriety he acquires, submit also to a little wholesome admonition. He wants entirely that clearness and perspicuity of thought and expression which qualify a man to make a good appearance in a Court of Justice. What but the most hopeless confusion of ideas could have induced him to tell the jury (see Times, August 28) "that Mr. Brodie had stated to him that the jury must have misconstrued his meaning," when Mr. Brodie expressly says to the Coroner, in the letter above given, "I have no reason to believe that either you or the jury misunderstood what I said?" We recommend to Dr. Thomson's perusal some pertinent observations on medical evidence in general, and on his evidence in particular, which are contained in the Medical and Surgical Journal, just published, by which he will perceive that we do not stand alone; in fact, the opinions we have expressed are those of every impartial man of his own profession who either heard or has seen his evidence.

#### MEDICAL ATTENDANTS ON MISS CASHIN.

FROM our happening in our leader last week to mention first the case of the Miss Cashin who died last—reserving the other as a climax—it is just possible that an erroneous idea may be produced as to the order in which the different medical men were called in. This is of some importance, as it might seem to imply that Mr. Watson was in attendance



on the young lady who died from sloughing of the back, whereas he was not called in till several days after her death, when his services were required in aid of the poor girl who still lingered in consumption.

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### CORONER'S CHARGE TO THE JURY.

“GENTLEMEN OF THE JURY: I understand we have now got pretty nearly to the conclusion of this case. Mr. Adolphus does not mean to call any further witnesses in this proceeding, which has gone to a great length. Would it be your desire to have the whole of the evidence read over to you, or are you so far masters of it as to be able to come to a right decision without it? Because, if you think it right to refresh your memories with the evidence, I will read it from the beginning to the end; for, without reading it at all, I think it would not be possible to do justice to the one side or the other. But if you are, as I said before, already satisfied, there will not be any occasion to go through that ceremony.

“A Juror.—We have a perfect recollection of the evidence; there will be no necessity for reading it over again.

“The Coroner.—There are a few remarks which I shall take the liberty to address to you, and which I shall do very shortly, because in my opinion the case lies almost in a nutshell. You have had a great number of medical gentlemen, physicians and surgeons, examined, and they almost all coincide in opinion, that even if a person had occasion for a blister, it would be unwarrantable to create such a sore as this was on the back of this lady, when it was seen after death. If you recollect you had a young lady here who viewed the sore, and she described the state in which she found it, namely, that it was of a white appearance, crusted over, with a little oozing at the bottom part of it, and encircled with a mark of inflammation. This is, as near as I can guess, the situation in which she describes having seen the wound on Friday; and on Friday night she passed a most unquiet night. The mistress of the house was quite alarmed, and the doctor, as you will recollect, was sent for to state in what condition the young lady was. He saw her back,

and said it was in a promising condition. But, if you recollect, the lady of the house said that she, of her own authority, had applied a poultice on the back of the young lady, without the knowledge or authority of the doctor, and when he came she pointed out to him that there was a black spot, and she inquired of him what was the reason of it. He said the thing was going on very well; that it was occasioned by his system; that she did not understand the system; and that the sickness, and all that appeared, were symptoms only of what was going on, in consequence of his system. The young lady continued to get worse. She had written to her brother-in-law in Ireland, and he came over post haste, anxious on her account, hearing that she was so extremely ill, and Mr. Brodie was called in. He did not see the wound till after the application of the poultice, and the poultice, I suppose, had removed that hard substance which was on the top of the wound, and therefore he had an opportunity of looking deeper into it than Mr. Long had; for he had withdrawn himself the moment that Mr. Brodie was applied to to attend the young lady. The young lady continued ill, and got worse; and the mistress of the house stated that the sore had assumed a much worse appearance; and, ultimately, she was called up in a great hurry, and she found the young lady in the act of expiring. Then another gentleman, of the name of Foulkes, was called in, but it was all over; there was no chance of recovery after Mr. Foulkes was called in. Therefore the thing seems to have come back to this point. This gentleman, Mr. Long, had great experience for two years at least, with a variety of patients for a variety of diseases, and he applied pretty nearly the same remedy, it should appear, to all of them; and if they do not deceive themselves, a great number of them were perfectly cured, and others have found themselves, as they imagine, a great deal better; and some of them have been to the doctor to-day, notwithstanding the unfortunate event which has happened in relation to Miss Cashin, and their faith is so strong in the doctor, that they will go to-morrow; and some of them say that they will send any of their family who happen to have occasion for medical assistance. This gentleman, Mr. Long, appears, by the evidence of one of the wit-

nesses, to have been brought up with a respectable education. It appears that he had been in Dublin, where he attended anatomical lectures, not merely drawings of anatomical figures, but actual lectures, surgical lectures, on that head; and therefore, of course, he was acquainted with the construction of the human frame. As to physic, it appears he does not pretend to know that; he has no opinion of it at all, and therefore it is quite plain that he has not given his mind very much to the study of it. But the question seems to me to resolve itself into this,—whether Mr. Long, having formed an opinion of his own system, and having had it corroborated by so many respectable persons, was wrong in acting upon it; for you cannot suppose that the witnesses whom you have had before you have spoken any thing but what they verily believe; nor do I believe there is one of them who has not wished to tell the truth. Among the rest, there is the Surgeon-General of Jamaica, who, of course, ought to be a man of great experience in the medical profession; and I have no doubt he is. He has stated to you, that he has such confidence in Mr. Long, that he is now under his treatment for his ear and eyes, which are very much improved, he thinks, by the application of his lotion. The question, therefore, now is, whether, taking all those things into consideration, Mr. Long, having his own opinion so strengthened by the great success which he has had with his patients, according to the account which you have received from them upon oath, and having administered this lotion, or caused it to be administered, to this poor young woman,—although, unfortunately, it took a turn which probably he was not aware of till the last moment, for he said her back was going on well,—the question is, whether he is to be answerable for the consequences. If, gentlemen, every person who administers either blisters or physic, or performs operations, are to be made answerable for the consequences, God knows it would be a lamentable situation to be in; but if the man did all he could, according to his honest, fair opinion, and that diligently and without neglect, it does not appear to me that he can be accused criminally in this case. You are the proper judges on the subject. You have attended, I see, minutely to the evi-

dence. If you please you shall have it laid before you, if you choose to retire to consider your verdict; and I hope you will come to a cool deliberate decision,—putting out of your mind the unfortunate consequences that have happened in this case; and I have no doubt you will acquit yourselves to the satisfaction of your own consciences, and to the satisfaction of the public.

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#### COUNCIL OF THE COLLEGE OF SURGEONS.

MR. EARLE has been elected a member of the Council of the College of Surgeons, in the room of Mr. Abernethy, who has retired.

Mr. W. B. Lynn has addressed a letter to the Council—published as an advertisement in the Times—in which he declares that he renounces all intention of having his name added to their list, in consequence of their having passed over Mr. Elmore. Was Mr. Lynn aware, at the time he published this letter, that he had been anticipated in his wish, and that his name had already been passed over?

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#### ACADEMIE DE MEDICINE.

##### *Report of the killed and wounded in Paris during the late Revolution.*

ACCORDING to the returns of the physicians and surgeons of the several hospitals, it appears that not less than 7000 men have been rendered *hors de combat*. They reckon besides nearly 1700 wounded received into the hospitals and *ambulances*. M. Breschet reports 500 as the number taken into the Hotel Dieu; besides 300 out-patients, dressed by the surgeons of that establishment. The mortality has been by no means in proportion to the severity of the wounds—not more than 70 had died (up to the 10th of August); the greatest number of the wounded belonged to the working classes of the Faubourgs; out of the 500 there were no more than 25 of the military. A proportion nearly similar has been observed in the other hospitals. M. Husson remarks, that almost all the wounds were received in front—many of them in the chest and abdomen. Nor did the courage which the men displayed in the struggle desert them on their bed of

suffering; and those who underwent capital operations endured them without a murmur. The moral condition of the military is remarked to have been very different, the greater number of them being quite overcome with despair. M. Louyer-Villermay relates the case of a soldier of the Guard who sunk the day after the last engagement without there being any perceptible wound or bruise to which his death could be attributed. The Beaujon has taken in 80; La Pitié, 120; La Charité, 150; the Military Infirmary, 200; Val de Grâce, 20; a mason lodge, 80. Of the numbers received into St. Louis and St. Antoine, we have as yet obtained no official report; M. Cloquet promises a detailed account for the former hospital. Nor can we speak positively as to the numbers treated in the Ambulances, by reason of their perpetually changing condition. Almost all the wounds were from fire-arms—few from cold steel: they have been generally severe, most of them having been received in close combat; yet it is expected that most of the wounded will recover. M. Larrey has assured the Académie that of the hundred which came under his care at Gros-Caillon, not one had died: several of them, however, had undergone serious operations.—*Journal Hebdomadaire*.

## HOSPITAL REPORTS.

### EDINBURGH ROYAL INFIRMARY.

#### *Aneurism by Anastomosis on Face—Cured by Ligature.*

ROBERT MILLIGAN, æt. 19, admitted under the care of Mr. Liston, May 11th.

A livid projecting tumor, presenting all the usual characters of aneurism by anastomosis, occupies the middle of the upper lip, almost the whole of the nose, and the lower part of the forehead, producing little inconvenience to the patient, but causing unseemly disfigurement of his countenance. The frontal, nasal, and labial portions of the tumor, appear to be circumscribed and separate; but when examined, are found to be intimately connected with each other.

The patient states, that a small blue speck existed at birth on the left side of his nose, and that this navis increased gradually, and without causing any pain, until it attained its present size and situation; of late it has

been almost stationary. Several livid spots are seen on other parts of his body—one on the chin, another on the breast, and on the inside of the left foot; these, however, are extremely minute, and are not enlarging.

May 12th.—Mr. Liston included the labial portion of the tumor in two strong ligatures, which were passed beneath the diseased part by means of curved needles in fixed handles.

By the 18th the enclosed mass had become completely sphacelated, and was removed.

On the 19th the frontal portion had its vascular supply interrupted by means of ligatures, applied in the same way as formerly, and the diseased part soon separated.

The remaining and largest part of the tumor, that involving the nose, was also surrounded by ligatures; but, from the largeness of its size, and the peculiar situation which it occupied, the operation was necessarily more tedious than in the preceding instances. By means of fixed needles, insinuated carefully beneath the swelling, with their concave surfaces towards the prominence of the nose, numerous ligatures were passed, and were so disposed, that after tying the extremity of each with the one next it, the tying of the last tightened the whole. The point of the nose was, by their application, drawn slightly upwards; but on the separation of the sloughs it regained its usual situation. The tumor was completely surrounded, and soon shewed symptoms of rapid decay.

Mr. Liston remarked, that from the great size of the growth, and the apparent activity of the congeries of vessels which composed it, he believed an attempt to remove it by incision would have been extremely hazardous; but that the employment of the ligature was a safe and effectual practice.

An attack of erysipelas followed the application of the ligatures to each of the swellings, and involved the greater part of the face, commencing in the neighbourhood of the tumor, and rapidly extending around. It soon yielded, however, to the employment of punctures and warm fomentation, and the internal exhibition of antimonial medicines. The predisposing cause of the erysipelas seemed to be the particular condition of the atmosphere at that season, for it was prevalent both in the rest of the house and in private practice.

After the separation of the sloughs, the surface assumed a healthy appearance, forming small florid granulations, and discharging a moderate quantity of good pus. When the patient left the hospital, the wound had contracted to a small size, and cicatrization was proceeding rapidly. His appearance was much improved.



# THE LONDON MEDICAL GAZETTE,

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SATURDAY, SEPTEMBER 11, 1830.

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## LECTURES ON SURGERY,

*Delivered at St. Bartholomew's Hospital,*

BY WILLIAM LAWRENCE, F.R.S.

### LECTURE LXXX.

*Additional Remarks on Hare-Lip—Urinary Calculi—their Nature, Symptoms, &c.—Means of detecting their presence—Sounding.*

THERE are two points, gentlemen, connected with the operation of hare-lip which I omitted noticing to you in the last lecture: the first of these is, as to the proper mode of proceeding in the case of double hare-lip, where there is a fissure on each side. The fissure of hare-lip, I may observe to you, when it is single, takes place on one side of the lip—that is, it corresponds to the opening of one of the nostrils, and thus you may have two fissures, one situated on each side of the lip, corresponding to their respective nostrils. I consider the best mode of proceeding in those cases to be that of operating separately on each fissure—operating on one side, as in the case of a single hare-lip, and then, when the patient has completely recovered, operating on the other side. It would be possible, in the case of a double hare-lip, to operate on both fissures at once—that is, to proceed on each side, as you would do in the case of a single hare-lip, and to allow the hare-lip pin completely to traverse the middle portion left between the two fissures; but you cannot be so certain of paring away each of those parts, so as to be able to bring the surfaces into the exact contact necessary to secure the proper result of the operation, as you can when you operate on each side separately. Another circumstance is this: the fissure of the lip is often complicated with an unnatural projection of the alveolar process; and in those fissures of the lip, you find that the socket of one tooth projects

forward into the fissure; and sometimes, in cases of double hare-lip, the middle portion of bone—that which is left between the two fissures of the bony palate—stands forward horizontally, and pushes up the middle portion of the lip in such a way as to interfere very much with the operation. Whether this takes place in the case of simple, or of double, hare-lip, you must, before you proceed to approximate the sides of the fissure, remove the impediment which this particular configuration of the bone presents. You must, in the first place, cut off with a strong knife the irregular prominence of the bone with the portions of teeth which it may contain, and allow those parts to heal before you proceed to remedy the deformity of the lip.

### *Operations for Urinary Calculi.*

Concretions may form in any part of the urinary apparatus, at least in any of the cavities or tubes which are subservient to the secretion, retention, or expulsion of the urine; that is, they may form in the infundibula or pelvis of the kidney, in the ureter, in the bladder, or in the prostate gland. The urinary concretions which thus form are commonly denominated *stones*, from their hard structure; indeed, both from their configuration as well as structure, persons might call them, in common language, *stones*, and the complaint is denominated, generally, the *Stone*. In another form, urinary concretions nearly resemble gravel, and thus the term *Gravel* has passed into common language to denote a certain form of urinary concretions, in which, instead of being collected into one mass, they are deposited in several small portions. In technical language, we generally use the term *Calculus* as equivalent to the term *stone*; calculus and calculous disorders are the ordinary technical expressions. We might arrange these concretions according to the situations in which they are met with, such as renal, vesical, urethral calculi, and this distribution would be convenient enough

for practical purposes, but it would not be accordant with physiological views; for we find that in whatever situation those concretions are met with, they are generally of similar construction, so that it is only in a surgical point of view that we regard them according to the parts in which they are found; for a concretion which forms in the kidney is, at first, a renal calculus; it then passes into the bladder, and becomes a vesical calculus; it may go into the urethra, and then it constitutes an urethral calculus—but yet it is the same kind of substance in all those situations.

Now, as the materials of urinary concretions are derived from the urine, their nature could not have been well understood, until the composition of this fluid was ascertained. The recent progress of chemistry has led us to understand pretty fully the nature of the urine. Several pathological inquirers and practical chemists have defined with much accuracy the composition of the various urinary calculi, so that now the nature of those productions is pretty well ascertained and understood. So far as their chemical characters are concerned, those substances are considered in lectures on chemistry, and, therefore, I shall do no more than refer you on the present occasion, if you wish for minute information on the subject, to two excellent modern treatises on calculous diseases; Dr. Marcet's *Essay on the Chemical History and Medical Treatment of Calculous Disorders*, and more particularly Dr. Prout's *Inquiry into the Nature and Treatment of Gravel, Calculus, and other Diseases connected with deranged Operation of the Urinary Organs*. In these works you will find collected together all that you may want to know respecting the chemical histories of these substances.

Urinary concretions occur to our observation in three forms; we see them, in the first place, as a powdery sediment, taking place in the urine after it is evacuated: this sediment consists of matters which existed in a state of solution in the urine when it was evacuated, so that the urine in such cases is voided transparent, but in proportion as it cools certain matters are deposited, which render it cloudy, and which subside to the bottom of the vessel in which it is contained. There is a pinkish or a pinkish-white sediment very frequently observed in the case of febrile disorders, or in persons labouring under indigestion; it consists very generally of the urate or lithate of ammonia, of soda, or of lime. There is a sediment occurring under other circumstances, called white sand, consisting of the phosphate of ammonia and magnesia, and the phosphate of lime. Then, again, those substances are observed in the form of crystallized minute particles, in which case they are called gravel, in common and even in medical language. These consist of particles varying in size, sometimes very small,

sometimes larger, and generally, when accurately examined, having a crystalline figure. They are voided with the urine in their crystalline form, or they may be partly voided with the urine, and partly deposited from the urine as it cools, in the same way that the powdery sediment is. Then there is the red gravel, or lateritious sediment, in which case the patient may void some of those substances from the bladder in their concrete state; but it will often be found that he makes his water clear and transparent, and that the red particles crystallize in the vessel in proportion as the urine cools. The most familiar example of this kind of substance, is that which I have just last mentioned; it bears a pretty close analogy to some forms of red gravel, and consists of the lithic or uric acid. The third form in which urinary concretions are observed, is that of calculi or stones, and these are very various in their composition. The most common form of these substances is that of lithic acid, or uric acid in a concrete state; and the calculi thus composed are of a whitish-brown colour, and are generally deposited in successive strata, enclosing each other from the centre towards the circumference. Lithate of ammonia is another ordinary form of these substances: this consists of the lithic acid with ammonia, and it forms a stone considerably lighter in colour than that which is formed by the uric acid. [Mr. Lawrence here exhibited a plate from Dr. Prout's work, and pointed out the light brown colour representing lithic acid.] The phosphate of ammonia and magnesia, which has been called by chemists triple phosphate, constitutes generally the exterior of a great number of them; it has a white appearance. [Mr. Lawrence here showed some specimens.] Where the external layers, therefore, of a calculus consist of the triple phosphate, its appearance approaches almost to that of a piece of chalk; the interior is of a darker appearance—it is a different concretion. The exterior, then, of this stone, which is very different in appearance from the inside, consists of triple phosphate.

There is a stone very frequently met with, which consists of a combination of the phosphate of ammonia and magnesia, with phosphate of lime, and this stone possesses the property of vitrifying—running into a vitreous globule when exposed to the flame of the blow-pipe; hence it is called the fusible calculus. Another consists of the oxalate of lime, and this is distinguished by its hardness, so that the stone is very heavy compared with its bulk; and in many instances it forms on its exterior irregular tubercular prominences, so that the stone thus formed has been compared to the fruit of the mulberry tree, and has been called mulberry calculus. [The Lecturer here exhibited two specimens.] However, this circumstance,

the irregular tubercular appearance, is by no means a necessary character of the stone, which is formed by the oxalate of lime; you may have it without presenting those prominences.

It sometimes happens that a stone contains a mixture of different ingredients, although this is not common; and it still more frequently happens that stones consist of successive depositions of different substances; the central parts, for example, being lithic or uric acid, and then layers of the phosphates externally. Sometimes there is an alternation of those; thus we have uric acid, then the phosphates, then uric acid, then phosphates again, and so on. So that stones are met with occasionally which exhibit nearly all the constituents that belong to those various calculi: a single stone may have them all.

When a stone is sawn through, it is usually found that the matters of which it consists are deposited in layers, so that you see very clearly successive strata; you do not see a uniform combination of the substances throughout, but you observe there are numerous layers, which are very distinctly visible when the stone is sawn through. Indeed the successive depositions of matter which constitute a large stone, may occupy a period of several years: during this time the chemical composition of the urine may vary very considerably; the state of the health of the individual, and consequently the state of the urinary secretion, may be very variable. Thus it will happen, that for a certain length of time no matter at all is deposited, and again, that the stone, after it has remained in a quiescent state for a certain period, has a new stratum laid upon it, which may be quite different in its nature from the substance which formed the stone previously. Thus it will happen in these old cases of stone, that you have a succession of different ingredients or materials, depending on the state of the health of the individual, and the time when the substances have been deposited. When you saw through a stone of this sort, you very commonly find that the substances have been deposited round a small piece in the centre; it appears that a small portion of matter of some kind or other has formed a centre, round which the calculous matter has been deposited, and this is very commonly called the *nucleus* of the stone. In the case of certain calculi which are found in the bladder, it sometimes happens that the nucleus is of some foreign substance that may have been accidentally introduced into the bladder. This [shewing a calculus] is a specimen of calculous matter deposited upon a portion of foreign substance that had been introduced into the bladder of a female through the urethra; and we have a specimen in the museum of a stone, which I removed from a patient in the hospital, where the calculous

substance was deposited round a portion of a metallic bougie; the patient had been in the habit of using the instrument, and a portion of it had broken off. But in general the nucleus consists of some concretion that has been deposited from the urine itself.

Now, of the various substances that I have just enumerated, all are not of equally common occurrence. The lithic or uric acid forms by far the greater number of urinary calculi; and Dr. Prout states, if we refer to a table of this description, that those stones of which the lithic acid is the principal ingredient, and those in which it forms the nucleus, will form about two-thirds of all the calculi that are found in the human bladder. The phosphates come next, that is, the stone consisting of the phosphate of ammonia and magnesia—the fusible calculus;—the oxalate of lime, or mulberry calculus, comes next. There are other ingredients of stones met with in certain rare instances, but they are too uncommon to render it necessary for me to mention them in this general view of the subject.

It seems probable that, in a great majority of instances, the origin of urinary calculi is in the kidney; that something is deposited from the urine in that organ—some concretion takes place there, which passes through the ureter into the bladder, and forms a nucleus, round which successive depositions take place. Not uncommonly we meet with depositions in the kidney; generally speaking, however, a concretion which is deposited in the kidney is of a size which admits of its passing along the ureter into the bladder, so that it does not remain in the kidney. But in certain cases these concretions do remain in the kidney, and obtain a considerable magnitude there; they may even become so large as to fill up the pelvis of the kidney and the infundibula, forming a pretty accurate cast of these parts. Here [selecting a preparation] is one that does so: this is a large concretion, filling up the pelvis and infundibula. These concretions generally take the form of the cavities in which they are deposited. The greater number of concretions that are thus deposited in the kidney consist of lithic or uric acid, and hence it is that we find the nuclei of a great proportion of the stones extracted from the bladder to consist of this uric acid, although the other parts of them may consist of a different matter. It is possible, however, that calculi may form entirely in the bladder. If a foreign substance is accidentally introduced into the bladder, depositions may form around it, though it never had been in the kidney.

In stating that the great majority of calculi are formed in the kidney, I conceive, and no doubt it is possible, that a stone may have its origin in the bladder; indeed, certain states of the bladder in which the urine



is detained in it, and placed in a situation favourable for the deposition of its contents, are likely to be attended with the formation of calculi. This is the case in disease of the prostate, where the third lobe of the gland becomes augmented in size so as to impede the expulsion of the urine; in such a case a calculus is frequently found in the bladder. I believe that other depositions, as well as that of uric acid, may be found in the kidney; for example, the oxalate of lime or the phosphate of lime, and thus the nucleus of other stones than those which have uric acid in the centre, may be furnished from this part. The greater portion, however, of the bulk of calculi, no doubt, is deposited from the urine in the bladder; and it is sufficient to produce this deposition in the bladder, that some substance, either a nucleus of uric acid, or of the oxalate of lime secreted in the kidney and passed into the bladder, or a foreign body introduced into it—it is sufficient that some substance of that kind should exist in the bladder, to ensure the successive depositions of various matters in the way I have mentioned. I have stated already that the depositions which take place in the kidney are generally small, and that they pass in that state along the ureter into the bladder. They occasionally become considerably larger, but, at all events, whether they are small or large, they are not, while in the kidney, the objects of surgery. It may, perhaps, have happened in a rare case, that a calculus existing in the pelvis of the kidney may have excited inflammation of that part—may have produced abscess, and this may have become discharged externally; but we can hardly suppose any instance in which the discharge of a calculus in this situation, can be at all assisted by any surgical proceeding. I may make the same observation with respect to calculi in the ureter. Generally speaking, the passage of a stone from the kidney to the bladder is indicated by excessive pain in the direction of the ureter; by paroxysms of pain of the most severe kind, commencing in the kidney, shooting along the ureter down to the bladder, and ceasing as soon as the stone has passed into it from the narrow tube of the ureter. But this severe pain is not a necessary circumstance in the passage of a calculus from the kidney into the bladder; a calculus may pass in this way, and be urged through the ureter into the bladder, without the patient experiencing any considerable uneasiness. There are instances in which a calculus of considerable size has been voided through the urethra without any uneasy sensations indicative of its presence in the kidney, or its transmission along the ureter. It is, then, only where the calculus passes into the bladder that it becomes the object of surgical attention.

I should have observed to you respecting

the causes of calculi, that the circumstances immediately determining their formation must be looked for in the state of the urine. The formation of these concretions presupposes an unnatural state of that secretion. When we consider that the urinary secretion is one of the great outlets of the body—one of the principal channels by which superfluous and noxious matter is separated from the frame, we can easily understand how it happens that the composition of the urine may vary very considerably, and how it may come to possess the properties which give rise to these concretions. We see that in the case of an attack of fever, or even of simple indigestion produced by excess in eating, that the composition of the urine will be so altered as to produce, perhaps, an abundant deposition of the urate of ammonia. This is merely temporary; it goes off with the cause which produces it. But there are other conditions depending on the habits of an individual—conditions that may be considered permanent, and so long as they are kept up, the chemical composition of the urine will be such as to render the formation of these concretions very probable. When the state of the urine is such as to make it abound with lithic acid, so as to render probable either the deposition of red gravel, or the formation of lithic concretions in the bladder, the condition has been called by Dr. Prout the lithic diathesis. Another condition, where the urine abounds with the phosphates, and which occurs under a different state of health, Dr. Prout calls the phosphatic diathesis. We must look, therefore, to those states of the urine as explaining the nature of the substances which form the depositions of urinary concretions in different cases, and we must advert to the general state of the health of the individual, and his habits of living, in order to understand how it is that the urine forms these depositions. Now, in respect to the latter part of the inquiry, we really labour under a good deal of difficulty; we can scarcely perceive how, with respect to the urine, the one or the other diathesis is produced. We can see that, in general, irregularities of diet will produce morbid states of the urine, but we are at a loss to point out what the peculiar circumstances are that will give to the urine a disposition to deposit lithic acid, or the phosphates, or the oxalate of lime. On this subject our knowledge is not sufficiently advanced to enable me to bring forward any thing definite and clear.

In speaking of the causes of urinary concretions, we are led immediately to advert to one circumstance, which is their great comparative frequency in young subjects. About half of the operations for stone are performed on subjects under the period of puberty. The affection is also much less frequent in females than in males. Dr. Prout gives a tabular view of 1058 cases; of these

509 occurred in individuals at or under the age of fourteen years, and 549 above the age of fourteen. Of the same number, 1014 were males, and only 48 females. Now it has been considered, that the greater frequency of the complaint in young subjects than in adults partly arises from the comparative smallness of the urethra, so that a minute nucleus which would pass through the urethra of an adult is detained in the bladder, in consequence of the small dimensions of the urethra in the child. The comparative infrequency of the occurrence of stone in the female, certainly admits of a very easy explanation from the short course of the female urethra, and its large dimensions.

Calculus, as it exists in the bladder, is formed under very various circumstances. In the first place, the concretions vary very much in size; they vary in weight from a few grains to forty or even fifty ounces—for calculi in the bladder have sometimes attained that magnitude. I have taken a calculus from the bladder of a child, which I suppose would not have weighed more than eight or ten grains; and this [exhibiting it] is a calculus taken out of the bladder of an adult, which will weigh more than a quarter of a pound.

The form of calculi in the bladder differs very much: they are more or less rounded, spherical, oval, or flat; sometimes particular parts of the calculus are moulded according to certain parts of the bladder with which they may have been in close contact.

The number of calculi varies very much: there is often a considerable number, but most commonly there is only one; and in the case of there being more than one, they are apt to come into contact at certain points at which they have a smooth surface: no further depositions taking place on these parts, these surfaces correspond when there are more stones than one, and are the *pierres à faucettes* of the French. Usually they are loose in the bladder, but there are instances in which calculi are adherent to some part of the bladder, or contained in cysts communicating with it. Here is a specimen of the latter sort. This circumstance, however, of the encysted state of calculi is a very rare occurrence; it is hardly to be calculated upon as likely to modify any of our surgical proceedings.

The symptoms of calculus, as you will naturally expect, are principally those which a mechanical irritation affecting the internal surface of the bladder might be supposed to produce. The presence of a foreign body within the mucous surface of the bladder, which is immediately irritated by it, you would suppose likely to produce pain; to produce not only pain of that part, but sympathetic pains of various other parts, having their supply of nerves from the same source as the bladder. Thus you will not

be surprised to find, that stone in the bladder produces pain not only in the region of the bladder, but also along the course of the urethra; that it frequently produces severe pain at the extremity of the penis, and often pain about the thighs and the loins. The pain which is thus produced by calculus in the bladder differs materially in degree; the patient may experience slight uneasiness, or he may be subject to the most excruciating pain; indeed, the sufferings that are produced by stone in the bladder, are ranked among those which are of the most torturing kind, frequently coming on in paroxysms, under which patients suffer as great a degree of agony as they can possibly experience under any affection whatever. There are generally intervals, however, in this complaint, in which the patient is comparatively free from pain. The pain comes on most frequently when he voids his urine, that is, when the bladder contracts, and it is usually pretty severe after the urine has been voided, that is, when the bladder being emptied, its coats are brought into immediate contact with the foreign body: when that foreign body is pressed against the neck of the bladder, there is also great pain: the act of voiding the urine is also often extremely painful. In other instances, the patient experiences so little pain, that sometimes the presence of stone is only discovered accidentally. I remember being called to give assistance to an elderly gentleman, in consequence of his not being able to make water: he laboured under an enlargement of the prostate gland, and had not complained particularly of any thing wrong about his urinary organs, or sought medical assistance until I saw him; I introduced the catheter, and drew off a large quantity of water from the bladder, and after doing this two or three times, I struck against a stone behind the prominent portion of the prostate, which had obtained a considerable magnitude, though it had not interfered with the passage of the urine, nor caused any serious inconvenience. He was engaged in active pursuits, until retention of urine came on from disease of the prostate gland, and he did not know that he had a stone in the bladder. Patients have died of other complaints, and stones have been found in their bladders, although they have not been aware of the existence of any such substances. Stone, therefore, is not necessarily such an extremely painful disease as is supposed.

The presence of stone in the bladder produces an habitual irritation of the organ, which makes the patient feel a frequent desire to pass his water; and this inclination sometimes comes on every quarter of an hour, every half hour, or every hour; generally speaking, it is most frequent when a calculus is lodged at the neck of the bladder. The urine often presents an un-

natural appearance when there is a calculus in the bladder, owing to the mucous coat of the bladder having its secretion altered; it pours out an excessive quantity of mucus—a thick, ropy, and viscid secretion; sometimes a red fluid escapes, from the admixture of blood with the water, and this is observed to take place more particularly after exercise, especially after any kind of exertion by which the calculus is shaken in the bladder. The same causes produce an increase of the sufferings of the patient, so that he cannot ride on horse-back, he cannot ride over a rough road or along a paved street in a coach, without considerable aggravation of the pain. The alteration of the discharge from the mucous coat of the bladder sometimes proceeds so far as to produce copious bleeding; you have a large quantity of blood poured out into the bladder, and coagula of blood are voided with the urine. These are the effects immediately produced by the presence of stone in the bladder, in consequence of its irritation as a foreign substance acting upon its mucous coat.

But these symptoms, striking as they appear to be, and directly as they seem to point out the existence of a source of irritation affecting the mucous membrane of the bladder, are not conclusive as proofs of the existence of a stone in that viscus, for they may take place under other circumstances, that is, from other diseases attacking the bladder. Various organic diseases may produce changes in the state of the urine, pain in the region of the bladder and neighbouring parts, inconvenience and difficulty in the evacuation of the urine, and, in fact, nearly all the circumstances which I have enumerated to you as being produced by the presence of stone. In order, therefore, to prove that the symptoms are produced by stone in the bladder, and not by any other of those affections, it is necessary to introduce a metallic instrument to touch or strike upon the stone; and this is the only proof on which you can rely, as showing that stone actually exists in the bladder in any particular case. The operation of examining the bladder in this way, for the purpose of directly determining whether stone exists in the bladder or not, is technically called *sounding*, and it consists usually in the introduction into the bladder of a polished steel instrument called a sound. When such an instrument strikes upon a hard body, it produces so different a sensation from that which is caused by its coming in contact with any part of the bladder, that you immediately detect the nature of the case; and indeed if the sensation communicated to the hand were not sufficient for this, you may also have the additional evidence of the sense of hearing, for you can strike the metallic instrument against the hard substance

so as to produce a sound that is audible—a sound that sometimes may be heard at a considerable distance from the patient; and when you have that evidence, you can no longer entertain a doubt respecting the case. The most convenient form of instrument for sounding the bladder, is the shape which I have already described to you as being the fittest for catheters, and all similar metallic instruments; that is, a curvature constituting the fourth of a circle of four inches in diameter. This is a shorter or smaller curve than is ordinarily found in sounds and staffs, but it is a form of the instrument which enables it to move freely and easily in the bladder; the bend of it does not strike against the back and other parts of the bladder, so that you can move it about and examine the viscus in different directions, to ascertain what is in it. Baron Heurteloup gives to the instrument which he employs for the same purpose, a still smaller curve; that is, the curved point of his instrument is the quarter of a circle, of which the diameter is three instead of four inches; and as he seems to have paid great attention to all the circumstances observed in these cases, I dare say that this may be found a proper shape to be used for the purpose. You introduce the instrument; then you turn its handle so as to direct it from side to side in the bladder; push it on to the back of the bladder, draw it towards the anterior part; introduce it completely, and draw it a little out again, so that merely the end of the instrument shall be within the bladder, and then move it about again, trying thus in various ways, so that if a stone is in any part of the bladder it may not escape the contact of the instrument. And here I may observe to you, that should there be any fluid in the bladder, the stone will be always in the lower part, and the lower part will vary according to the situation in which the individual is when you are sounding him. Thus, what is the lower part in one situation, in another situation would be the upper part; if the patient is lying horizontally, you may easily judge whether the stone will be at the bottom of the bladder or not. The projection of the inferior part of the prostate sometimes raises the end of the sound where it enters the bladder, so that a stone resting at the bottom of the bladder, behind the prostate, will escape detection, even upon a very careful examination; and in this case it is expedient, where you suspect the existence of stone and do not find it, in the ordinary way of sounding, to raise the pelvis, when the neck of the bladder being no longer the most depending part of it, the stone will not remain in the situation in which the prostate affords that mechanical impediment to your ascertaining its existence. It appears to me on the whole, that the mode in which the bladder is sounded



by Baron Heurteloup\*, and by the gentlemen who practise the breaking of stones in the bladder, is peculiarly well calculated both to ascertain the presence and size of the stone, the capacity of the bladder, and a variety of other circumstances of consequence—of more particular consequence, certainly, to those who practise such operations, than to those who practise lithotomy, because until those points are ascertained, it cannot be known whether the breaking of the stone in the bladder is practicable at all, or in what way the various measures that are to be adopted should be had recourse to in any particular instance; but with respect to ordinary lithotomy, the simple operation of sounding, in the way I have mentioned, will be sufficient for the purpose. In the preliminary examination which takes place before the operation of breaking down the stone, it is usual to let the urine out of the bladder, and then to inject warm water into it, so that the capacity of the bladder is pretty accurately ascertained; and in that state certain circumstances can also be ascertained, in reference to the position of the stone, whether there be one or more stones, and so forth, which cannot be well found out in any other way.

The proceedings we are to adopt in reference to those circumstances, we must defer till the next lecture.

#### LECTURE LXXXI.

*Operations for Stone—Lithotripsy and Lithotomy—Lateral, High, and Recto-Vesical Operations—Excision of Calculi from the Urethra—Fistula in Ano—Hæmorrhoids—Stricture of the Rectum.*

THE only effectual remedy for the sufferings that are produced by stone in the bladder, is, the removal of the cause, that is, the extraction of the calculus. The sufferings of the patient, however, admit of alleviation by other means, the cause still remaining. There are certain palliative measures of treatment, that may be adopted under circumstances where it is either deemed inadvisable to proceed to the operation, or where the patient does not choose to submit to it.

The increase of the stone can be prevented, and at the same time the symptoms under which the patient suffers mitigated, by altering the condition of the urine, and by remedying that unhealthy state of it on which the growth of the stone by successive depositions of new matter depends. You might suppose that the effect of such a change would be limited simply to the prevention of the further increase of the con-

cretion; it is found, however, that it also tends to mitigate the sufferings of the patient: so that although the stone still remains, if the urine can but be brought into a completely healthy state, the patient will suffer but little—experience very little inconvenience from the presence of the stone in the bladder. Before the changes which the chemical composition of the urine undergoes in calculous disorders were well understood, common experience had led medical men to repose great confidence in the use of alkalies, in a great number of such complaints. I mentioned to you in the last lecture, that, of the concretions that constitute stone, a very large number of them owe their origin to lithic acid—according to Dr. Prout, two-thirds of the whole; so that you see a state of the urine loaded with that acid, prevails in the larger proportion of cases of this complaint. The remedy for this state of the urine consists in the exhibition of alkaline substances: the pure alkalies, the carbonated alkalies, or soda water may be given under such circumstances:—magnesia is also very useful; soap and lime water have also been administered under such circumstances, and the proper administration of these means, combined with attention to the regulation of the diet and state of the bowels, will often destroy the acid state, and completely suspend the deposition of the lithic acid, thus preventing the further increase of concretions of that particular ingredient. But in other cases the morbid state of the urine is of the opposite kind; there is a predominance of alkali in it; you find, under such circumstances, that it has not, as in the lithic diathesis, the property of reddening vegetable blues, but that it will deepen the colour of turmeric paper, and that in a short time after it has been evacuated, it will have a strong ammoniacal odour. Here the contrary remedy is necessary; you must exhibit acids.

You might, *à priori*, have doubted whether medicine taken into the stomach and submitted to the action of the digestive organs, would change the state of the urine, or, at least, so far alter its chemical properties as to take away those predominant qualities that I have mentioned. It is, however, found by experience that it does, and that by the exhibition of alkalies in the acid state of the urine, and of acids in the alkaline state, you may not only destroy the predominant quality, but convert it into an opposite state: by the exhibition of alkali you may not only destroy all acid, but convert the particular diathesis into an opposite one; that is, bring on an alkaline state of the urine, and the converse; so also with respect to the exhibition of acids. There can be no doubt, therefore, that certain medicines exhibited by the mouth are capable of affecting the state of the urine; and by their exhibition you may, as I have mention-

\* The reader is referred to Baron Heurteloup's paper on *Sounding* published in our preceding volume, page 1.

ed, not only prevent the further increase of the concretion in the bladder, but materially relieve the sufferings of the patient.

The great pain which exists in these cases naturally leads you to the exhibition of narcotics as a palliative measure for the relief of the patient, and they are often of very great service; opium and hyoscyamus are perhaps the two best; the latter is the most eligible, unless there are particular circumstances requiring the stronger sedative power of opium. In that condition of the urine in which there is a disposition to the deposition of phosphates, it is said by Dr. Prout that the administration of opium is to be preferred.

I may observe to you that this treatment with respect to the state of urine is not merely applicable to stone in the bladder; it is equally so to that state of the urine in which the formation of the stone has not taken place; and, indeed, may be more necessary in that state, for its adoption may prevent the concretion or formation of stone taking place. It is found that the lithic acid diathesis is the most easily corrected, and that the phosphatic diathesis, that in which the urine is alkaline, is much more serious—it is apt to occur in persons whose constitutions have been much debilitated, and to be attended with serious symptoms of debility; and combined with this change in the general state of the health, there is great pain and excruciating sufferings about the urinary organs. Under such circumstances, it has been observed by Dr. Prout that the free exhibition of opium is calculated to afford great relief; for example, to the extent of one or two grains once or twice, or three or four times, in the course of the four-and-twenty hours, until the symptoms are overcome. The warm, the tepid, the hip bath, or fomentations, are other means of a palliative nature. The sufferings of the patient are very considerably increased by the motions of the body, therefore rest, which keeps the stone from rubbing against the sides of the bladder, is also very important. Attention to diet and the digestive organs, will of course be combined with the measures I have mentioned.

In the case of the lithic acid diathesis, where the stone exists, the use of the alkalies will often bring the patient into that state of ease in which he hardly thinks it necessary to submit to the more effectual means of getting rid of the complaint. But in the case of the existence of stone in the bladder in the phosphatic diathesis, the ease that we can afford is not so great; we have not that power of changing the state of the urine which we have in the lithic diathesis; the health altogether is more broken, and the patient, under such circumstances, not finding his sufferings mitigated, is compelled to have recourse to the operation.

If, then, those palliative means do not afford sufficient relief to a patient labouring under the stone, we come to consider the means by which the calculus can be removed. Now, I may observe to you generally, that these palliative remedies are not confided in as means for relief where a stone is known to exist; they are more calculated for those states of urinary depositions in which calculous concretions have not yet occurred; for although you might mitigate the sufferings of a patient under stone for a time, while the cause exists any slight circumstance may again renew them; so that he lives in constant apprehension—in a state of alternate suffering and ease. Generally speaking, therefore, patients who have a stone in the bladder are willing to submit to the adoption of some measure by which the stone can be removed from it altogether.

I have mentioned that a small concretion, frequently after passing from the kidney, where it was originally formed, into the bladder, is expelled with the urine through the urethra; that it does not remain in the bladder, and consequently does not increase in size, so as to form a stone. When the symptoms which have indicated the passage of a concretion from the kidney into the bladder have existed, and it has not been voided, we may adopt means calculated to favour its ejection through the urethra; we may administer active aperients, put the patient into the warm-bath, and give diuretics; we may, perhaps, pass instruments of large size through the urethra to dilate it, and thus facilitate the expulsion of the small nucleus. While the concretion is still small, we sometimes are enabled to extract it through the urethra with a sound, which is constructed like a pair of forceps. This is an instrument [shewing it] devised by Mr. Weiss, of the Strand. You observe that it is like an ordinary sound, or nearly so; there is a little bulging at one part; now, by pressing on the end of the instrument, it separates like forceps, and if you have got a stone of small size at the other end, it may be grasped between the two blades of the instrument, and you can thus draw it out. Indeed, by means of this instrument, stones of considerable magnitude have been extracted through the urethra—stones as large as the end of my little-finger. Sometimes a stone has been seized with this instrument in the bladder, so large that it could not be drawn the whole of the way out through the urethra; it has been drawn out of the bladder into the urethra, and then an opening has been made into the urethra externally, and the stone has been got out in that way. In the case of calculi of the prostate, if they become troublesome, you might probably be able to extract them with an instrument of this kind.

Of late years a plan has been devised, and brought to a considerable degree of perfec-

tion, by the French, for breaking down stones in the bladder, and reducing them into fragments of a size capable of passing out of the bladder with the stream of urine through the urethra; and this plan has been denominated the *lithotritic* or *lithotriptic* method, a compound word from the Greek, meaning the crushing of stones. In this plan, instruments have been introduced into the bladder of a cylindrical form, like a catheter, though composed of a complicated assemblage of pieces, and admitting of certain parts being protruded from the interior of the tube, expanded and retracted, so as to grasp the stone, and by the combination of these, with other contrivances for boring or scooping out holes, the interior of the stone is reduced to powder; other instruments are then employed, by which the thin shell of the stone which remains is broken up into small pieces. Inasmuch as the instruments employed for this purpose are of considerable size, they require that the urethra should be of very full dimensions, in order to admit of the possibility of their application; they also require a considerable space in the bladder for the expansion of the parts of which they consist, and the performance of those manœuvres by which the stone is to be ground or broken into fragments. Thus it is necessary that the patient should have an ample urethra, and also that he should have an ample bladder, that is, a bladder free from disease, in which there may be room not only for the instruments and the stone, but also in which the latter may be seized and acted upon. The bladder must also be in a healthy state, in order that it may be able, when the stone is broken down, to expel, by its contractile power, the fragments with the urine. Under these circumstances, the plan of breaking the stone in the bladder is performed by those who have acquired a dexterity in the use of the instruments with tolerable facility; the stone can be readily reduced to such a state in the bladder as to admit of its being expelled through the urethra, and thus the patient gets rid completely of his sufferings, without undergoing the pain and risk that attend the operation of lithotomy. It appears to me that great merit is due to the French for the invention, and for bringing the mechanical means necessary to accomplish this purpose to such a degree of perfection. I should observe to you, however, that the instruments which are employed under various circumstances for the accomplishing of this object are complicated in their construction; that they require a considerable degree of mechanical dexterity, and that their safe employment on the living subject can, I think, only be undertaken by those who have had great opportunities of using them, under a variety of circumstances. For these reasons, I apprehend, that the practice of breaking the stone in the blad-

der will never become a general one; it will only be used by those who possess considerable dexterity, and those who have had repeated opportunities of trying it. I have had no personal experience myself of the subject, and I need not enter more into detail about it; if I were, I could only repeat what probably you have all seen in the journals and periodical works of the day\*; I would merely give my testimony as I have done to the ingenuity which the construction of the instrument displays, and the advantages which, under particular circumstances, those instruments may afford over the operation of lithotomy. One circumstance of great importance in the operation of lithotritry, is in the size of the stone; stones beyond a certain magnitude cannot be grasped and reduced in size by those instruments; that is, the size of the urethra and of the bladder is not large enough to allow of the introduction of instruments sufficiently large to grasp a stone beyond certain dimensions; the operation of lithotritry, therefore, is confined to those cases where the stone is of a certain size, perhaps about an inch and a half in diameter; I think that is about the extreme magnitude of stone which the gentlemen who practise this operation consider they are capable of reducing in this way.

I cannot pretend to give you any data of the comparative risk of this operation, and that which attends the operation of lithotomy, not having had experience in both. I do not suppose that the operation of lithotritry is free from all risk. Under many circumstances it is necessary to introduce the instruments several times—to make repeated operations on the stone, in order to reduce it to fragments—so that I conceive this plan of proceeding, although it may be less dangerous than lithotomy, is not altogether free from risk. The comparison, however, between lithotritry and lithotomy would not be fair, unless we compared the results of the two where they were put in practice in cases of the same description. Lithotomy is employed in all cases indifferently, favourable and unfavourable for the operation; but the cases to which lithotritry is applicable, come under the description which are called favourable, that is, where the stone is small, where the bladder is perfectly healthy, and where, therefore, there would be very little risk of an unfavourable result after the operation of lithotomy.

In those instances in which the new operation is not applicable we have recourse to the old method of removing the stone by the operation of lithotomy. This, as I have intimated to you, is a painful operation, and an operation attended with danger. There are various sources of risk inseparable from the

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\* See various papers by Baron Heurteloup in this and the preceding volume of the Gazette.



operation, which consists essentially in making an opening into the bladder, and forcibly drawing out the stone through it. The dangers of lithotomy, however, differ materially under different circumstances. I have mentioned to you that half of all the stone cases occur in patients under the period of puberty, and in those young subjects the risk of the operation is slight; and if it be skilfully performed, the deaths are very small in number in these cases. In persons who have arrived at adult age, and who are healthy, the risk is not very considerable; but in elderly persons, in those who are advancing in years, in those who have long suffered from the disease, and whose health is broken down by it, or impaired from other causes, as well as from the existence of stone in the bladder—where, from the long existence of disease, the stone has acquired very considerable magnitude, so that it cannot be extracted without much force,—under those circumstances particularly, the risk is considerable, and it becomes necessary for the patient to weigh well whether he will prefer submitting to the sufferings induced by the stone in the bladder, or run the risk of life, which is inseparable from an attempt to relieve him completely. This is a point which, of course, must be left to the patient himself in each instance, the nature of the risk being represented to him as accurately as it can be by the surgeon. Perhaps the most unfavourable cases for lithotomy are those in which the stones are of considerable magnitude.

In the ordinary *lateral operation*, the stone is extracted under the arch of the pubes; that is, it must come out of some part of the space left between the rami pubis and the ischia. Now there is only, a certain limited space left between the bones in this part, and this space is occupied by various soft parts, so that the stone cannot be brought out in this situation without considerable bruising, and perhaps laceration, particularly when its dimensions exceed a certain magnitude. You cannot, therefore, but run considerable risk, if you operate under such circumstances. In many cases, if you could ascertain exactly the size of the stone before the operation was performed, it might be deemed more advisable for the patient to remain with it in the bladder, obtaining such relief only as palliatives are capable of affording, rather than to undergo the very great risk of the operation, when the stone is of very large size. With respect to the kind of operation which is most eligible, I may observe that although various methods have been projected at various times, we are now tolerably agreed that the lateral operation which is performed by making an opening along the perineum, and cutting from the urethra into the bladder, is the best; it is

this which is almost universally practised, and which I will show you upon the subject when I have the opportunity of doing so.

The stone may be extracted from the bladder by making an opening into the anterior part of the viscus, above the pubes, and this is called the *high operation*. This operation was formerly practised, but it was abandoned in favour of the other; of late years, however, it has been revived and practised by one surgeon, I believe, in Paris, but I am not aware that there are any peculiar circumstances attending it that should induce us to abandon the lateral operation for it; for my own part I consider the lateral operation decidedly preferable to all the others that have been proposed.

Of late years another operation has been performed, that of making an opening through the rectum into the fundus of the bladder, and this is called the *recto-vesical operation*. By making an opening there the stone is accessible, and you have an opportunity of extracting it at that part of the outlet of the pelvis where it is the widest. This operation, however, has hardly ever been practised in England, and I do not know that the advantages observed, where it has been practised, have shown that it is preferable to the lateral operation; as to the mode of practising it, I shall defer the observations which I have to make on it until I can show you the operation on the subject.

If a stone is lodged in the urethra, the removal of it is easy. You have merely to make an opening into the part where it is lodged, and to take out. [Mr. Lawrence here exhibited a preparation.] This is an example of stone in the urethra, the presence of which is shown by a slight contraction of the canal around it; the stone is of pretty considerable size—larger than a filbert. In those instances in which I have had occasion to make an opening into the urethra for the extraction of a calculus, I have found that the wound has healed very readily. The operation itself is perfectly simple—nothing can be more easy. The foreign body serves as your guide; you have only to cut down upon it, and take it away, and the opening, in all the instances in which I have seen the operation performed, has healed up very readily.

#### *Fistula in Ano.*

Matter sometimes forms in the neighbourhood of the anus, and if the abscess be left to open of itself, it very commonly passes afterwards into the state of fistula, forming the case commonly called *fistula in ano*. You have a small opening situated either near the margin of the anus, or at some little distance from it, and through this a discharge takes place sometimes constantly, at others occasionally. The opening is so small that it sometimes becomes closed externally, until the secretion distends

the cavity, and makes its way out again. You introduce a probe into the opening, and you find that it passes to a considerable depth under the skin towards the rectum. You may find that the probe which you thus introduce passes into the cavity of the bowel, perhaps an inch or so from its external aperture, and this constitutes a complete fistula; that is, a cavity which has an external opening in the skin, and an internal opening into the cavity of the large intestine; more frequently there is merely the external aperture, and that is called an incomplete external fistula. Sometimes there is no external aperture, but only an internal opening into the bowel, and from which matter occasionally escapes, and this is called an incomplete internal fistula. In the latter case there may be some degree of redness of the external integuments, indicating that the fistulous cavity approaches to the skin, although it may not have penetrated the integuments.

In these different cases the only effectual means of relieving the patient is by producing a consolidation of the cavity which constitutes the fistula, and this is done by slitting up the cavity towards the bowel, so as to reduce it into the state of an open sore, which will granulate and heal: this is the operation for fistula in ano. Patients very often entertain a great dread of this operation; they fancy it involves a great deal of cutting, the application of caustic, and other very painful proceedings; the truth, however, is, that nothing can be more simple. Heretofore the operation was indeed very serious, for it embraced not only the opening, but the dissecting away of the fistulous cavity. The older surgeons fancied that the sides of the fistula consisted of unhealthy callosity, and that it was necessary to cut this away, in order to bring the part into a healthy state; of course if that was done it would be a very painful and a very serious operation. We find, however, that nothing more is necessary than to slit up the opening, and that it then heals very readily. If there be a complete fistula, with an external aperture, and an opening into the bowel, nothing is more simple than the operation; the forefinger of the left hand is carried into the bowel, a probe-pointed bistoury is introduced through the external opening in the skin, carried forward till the end comes upon the forefinger of the left hand, which is in the rectum, and then the knife is brought out with the point resting on the finger, so as entirely to cut through the portion intervening between the sinus and the cavity of the gut. This proceeding exposes the surface of the fistula: you then introduce a portion of lint, with a little simple cerate, into the opening, to prevent the sides of it from uniting, and confine this dressing in its place with a T bandage. You renew it at the end of a few days, after

which no further bandage or dressing is necessary, and the operation will be complete. It is not necessary to fill up very accurately the opening which you thus make; you merely wish to prevent the sides of the recent cut from coming into contact, and the gentle intervention of a thin portion of lint, spread with cerate, ensures the accomplishment of this purpose. If you put in dry lint, and cram the opening, you irritate the parts, and add to the suffering of the patient. I believe, in fact, that if you introduce a thin portion of dressing in the way I have just mentioned, and let it remain there for twenty-four or forty-eight hours, you need not introduce any thing for a longer period; at least I have operated on some persons who have not been well able to leave their occupations, so as to be laid up in the way such patients generally are; they have gone about in four-and twenty hours after, without any dressing whatever, and I have found that the sore has cicatrised and done well.

In the case of an external incomplete fistula, you will find, that although the probe does not go into the bowel it comes close against it, so that you feel the point of it on your finger; the intestine is not perforated, but it is laid bare. Here you introduce the probe-pointed bistoury as before, down to the end of the cavity, so as to feel it against the finger; then pressing it pretty strongly, you force the probe-point through into the rectum, and so bring it down as I have above mentioned.

It sometimes happens that fistula extend further along the side of the bowel than I have mentioned, but it is not necessary that you should make a point of cutting through the side of the bowel all the way; it may go up so far that you would not like to carry up the knife, or divide it in its whole extent, for fear of wounding some artery, and indeed it is not necessary; if you cut the side of the bowel to the extent of an inch and a half, or two inches, that will be sufficient. Sometimes the fistula not only runs along the side of the bowel, but passes under the integuments in various directions; and in those cases it is best to slit up the whole. If there is an incomplete internal fistula, that is, a fistula without any external opening, and if you have a red state of the external integuments, pointing out where it comes near to the surface, you make an external aperture, and treat it as you would a complete fistula.

Sometimes very considerable abscesses form round the extremity of the large intestine: if the patient be in other respects perfectly healthy, you may open those collections of matter extensively, and you will find that, although the cavity may be considerable, it will generally granulate and heal up very well. But in many cases

where such large abscesses form, we find that the patients are not in a good state of health, and that frequently there is combined with this affection a state of disease of the lungs. It is by no means uncommon for patients who have disease of the lungs, or other parts of the chest, to have disease about the anus inducing fistula there. Under such circumstances, it answers no useful purpose to operate on the fistula; it is only a secondary complaint; it is better to leave it to itself unless there should be any very particular inducement calling upon you to perform the operation.

#### *Hæmorrhoids.*

Under the name of *piles*, or *hæmorrhoids*, are included certain states of disease of the lower part of the rectum, which, although differing in some respects in their external appearances, do not probably differ much in their essential characters. Certain individuals are subject to loss of blood from the anus, coming on sometimes at pretty regular periods, and sometimes at irregular intervals, and being unattended with any other obvious disease about the part. This constitutes, in common language, *bleeding piles*, and to this the technical name of *hæmorrhoid*, which means a flow, or discharge of blood, is more particularly applicable. In other instances, persons are subject, without any loss of blood, to occasional attacks of heat, inflammation, and pain about the margin of the anus, or a little within it, with tumefaction of the mucous membrane, raised into tumors of the size of a pea, or a bean, or even more considerable, and having a livid bluish tint, but without any loss of blood; those are also called *piles*, and sometimes in common language, or even in medical language, they are called *blind piles*. When persons have long suffered from this latter affection, prominent growths occasionally are formed on the margin of the anus, sometimes a little within it, sometimes on the very margin of the bowel, acquiring the size of a hazel-nut, or even that of a walnut, and these are called *hæmorrhoidal excrescences*; all these seem to be merely degrees and modifications of one and the same affection, and the blood-vessels of the rectum appear to be essentially the seat of disease in every instance. In the case of the discharge of blood, there seems to be a distended state of those vessels which occasions them to give way, and hence the loss of blood that takes place. In the *blind piles*,—to which the name of *piles* is more properly applied, there is an occasional enlargement of the vessels, and subsequently a subsidence of that enlargement, so that the parts return to their natural state; but in the *hæmorrhoidal excrescences* there is a permanent state of tumor produced.

So far as the loss of blood from the hæmor-

rhoidal vessels goes, if it is limited in extent, and the patient's health is in other respects good, it is not worth while to interfere with it; indeed this loss of blood often seems to be highly beneficial to the individual in whom it takes place; it is a relief to a state of plethora; and as persons generally keep themselves pretty full by eating and drinking considerably, it is a kind of safety valve to them, and they are all the better for having a little of the excess let out in this way. If this discharge should go beyond the healthy extent, there are of course obvious means of putting a stop to it; those means which would be calculated to reduce action of the vessels in any other part of the body may be employed in this instance, and I need not advert more particularly than I have already done to the nature of such means.

In the case of the occasional tumors that are formed by the hæmorrhoidal vessels, we not uncommonly find that the patient suffers excessively—that very great heat, and pain, and inflammation, are produced—and that so much local suffering, so much tenderness, is caused, that the patient cannot bear any motion, can hardly bear to rest in the sitting attitude, and appears to experience the greatest inconvenience from the friction occasioned by the motion of the lower extremities. Under these circumstances it is necessary to put the patient on low diet. This is a kind of complaint which does not take place in cases of low living—it generally occurs in those persons who feed themselves pretty well—it arises from indulgence at the table. Blood must, therefore, be abstracted, a low diet observed, and aperient medicines administered. Here, however, it is sometimes necessary to abstain from very active or rough opening medicines, for the irritation they produce often adds to the sufferings of the patient; aperients, therefore, of the milder kind, are best suited to this affection.

When the case gets into the third state—that of permanent excrescences—these are often the source of constant and very great inconvenience. The excrescences, if they are formed within the margin of the bowel, descend at the time the patient goes to stool; they are then pressed upon by the sphincter ani, and great pain is produced till they are returned. If they are numerous, great difficulty is often experienced in returning them; and as long as they remain down they increase in size, and of course the difficulty of returning them is augmented; if they are left out, their surface gets irritated, copious discharge takes place from them, they become excoriated and very painful. It is necessary, under such circumstances, to liberate the patient from the uneasiness he experiences, and the only consideration is, what is the best way of getting rid of these excrescences? They may be removed either by excision with a pair of



scissors, or by tying their bases with ligatures, so as to make them slough. The latter proceeding is a very painful one: the inconvenience to the patient is greatly prolonged—that is, the patient continues to suffer very much, until the ligature eats its way through and is detached; and in my opinion, this prolongation of suffering is completely unnecessary. I have never seen any inconvenience arise from cutting those tumors away with a pair of strong scissors. You make the patient force out the rectum by straining, as at stool, and seizing the tumors with a pair of forceps, or with a hook, draw them out, and then cut them away at their bases, repeating this proceeding till you have cut away the whole. It is expedient in removing these tumors, to cut into the sound part of the bowel; if you leave a portion of the affected part behind, you sometimes have a considerable bleeding, and the tumor may be reproduced; also if you cut into the sound part the bleeding is not so great. In these cases I have removed the excrescences very completely with scissors, and I have never seen the bleeding proceed to an injurious extent, even when several have been removed at one time. As these tumors have their attachments generally within the sphincter, the blood will accumulate in the bowel above it; the patient feels as if he had a motion to pass—he goes to stool, and then he voids a large quantity of coagulated blood, and generally no further bleeding afterwards takes place. After cutting off the excrescences, however, in this way, it is well to be on your guard against the occurrence of bleeding; you should, of course, before you perform the operation, have the bowels well cleared; let the patient remain in a horizontal posture for some hours afterwards; let the nates be raised, and covered with cloths dipped in cold water; let that be continued for some hours, and then there is no further fear of bleeding. The only reason, I apprehend, for having recourse to the operation by ligature, would be the fear of bleeding; and if it were resorted to, it would be necessary to tie almost every one of the tumors separately, and thus the operation would be very much prolonged.

#### *Stricture of the Rectum.*

The rectum is subject to the occurrence of stricture, and is liable to two forms of the complaint—that is, there may be simple thickening and induration of the coats, and contraction of the dimensions of the canal at a certain part; or the coats may be the seat of schirrous induration—the seat of a change of structure, which subsequently proceeds to carcinomatous ulceration. [Mr. Lawrence here exhibited various preparations.] This is a specimen of simple contraction of the rectum, the coats of the gut being in other respects healthy. This is a specimen of schirrous disease, where you find the coats are not

only greatly thickened, but hardened, the disease also extending to the surrounding structures; and you observe that the opening is reduced in its dimensions, so as only to admit of the entrance of a goose-quill. This is another example of that kind, where the schirrous change of structure occupies a considerable extent of the bowel; the coats are very much thickened and altered in structure, and there is a considerable schirrous induration externally, by which the uterus and vagina are consolidated into one mass with the rectum. This is another form of disease, in which the mucous membrane seems to be formed into a large spongy soft excrescence, and this patient was affected with all the symptoms that would be produced by stricture of the rectum, for this spongy state of the membrane diminished the dimensions of the bowel.

Thus you may have several changes of structure taking place in the bowel, all of which, however, produce symptoms of a lessening of the dimensions of the canal; and inasmuch as they offer a mechanical impediment to the passage of the fæces, they have certain symptoms in common. Costiveness gradually increasing, and coming to that degree that the patient never gets the bowels relieved except with the aid of purgatives or clysters, is one of the symptoms produced by these affections; and one that particularly characterises them is, difficulty in the passage of the fæces through the contracted part, so that the patient is much longer in emptying his bowels than other persons. Frequently the patient passes with a good deal of difficulty a certain portion of the motion, and then after a little time he feels that he again wants to go to stool. The fæces passing through a part that is much smaller in dimension than it should be, are themselves reduced in size: they are perhaps the size of your little finger, or even smaller, and this circumstance is observed whenever the fæces are of a solid form. Occasionally they are not only diminished in size, but flattened in shape; and there is some external figure impressed upon them, depending on the particular configuration of the opening through which they pass. These are some of the immediate consequences of stricture of the rectum. When the proper excretion of the fæces is thus impeded, and when habitual costiveness is produced, other parts of the digestive organs suffer, and the general health becomes affected. We cannot, however, be certain that stricture of the rectum is the cause of any of the symptoms under which a patient labours, unless we have the power of feeling the contracted part of the gut with the finger, or of ascertaining its existence by an instrument introduced there—a rectum bougie; and indeed we can hardly get clear evidence of the fact when stricture is higher up in the bowel than we can reach with the

finger ; for you will recollect, that the course of the rectum is by no means straight, and the surface of the intestine is not smooth and uniform ; in its natural state there are folds and irregularities, which present obstacles to the passage of an instrument along it. When, therefore, you have got to pass an instrument some inches up the bowel, you are very uncertain whether your inability to pass it beyond a certain extent proceeds from an unnatural obstruction in the bowel, or from some fold or irregularity of its surface. In all instances, therefore, when the disease in the bowel is situated higher up than you can reach with the finger, the evidence is more or less uncertain, unless the difficulties in the evacuation of the feces, or the peculiar configuration and diminished size of them, should be very marked.

The costiveness which the patient experiences is the first thing to which you must direct your attention. You should administer mild aperient medicines by the mouth, in order to relieve that state of the bowels—castor oil and other mild aperients may be employed for this purpose. Frequently you find that these are inefficacious, or at least that they do not accomplish what you desire—that mild means do not answer the purpose, and that purgatives of a more active kind, though they do empty the bowels, only add to the patient's sufferings. This inconvenience may be overcome by injections—you throw in warm water or gruel, and bring away the contents of the bowels above the stricture, and thus they are evacuated with ease. This is a very advantageous way of evacuating the bowels under those circumstances ; and by one or other of those means you must provide for the regular evacuation of the bowels in cases of this description. You must of course pay attention to the nature of the diet, for on this will depend the quantity and nature of the intestinal evacuations, and of course this circumstance will very materially influence the difficulty or facility with which the end in view is to be accomplished. In the progress of these affections, more particularly when the disease is of a schirrous kind, the patient experiences all the sufferings which cancerous or schirrous disease in other parts of the body produces. The disease being communicated to the parts around, the affected bowel forms such growths as you here see [pointing out a preparation.]. Very commonly the urinary bladder, or in the female the uterus, is involved. The pressure above the stricture produced by the attempts to evacuate the bowels, causes inflammation of the parts, and sometimes the formation of matter, or ulcerations ; thus communication may be formed either with the bladder or uterus ; or matter may be deposited in the neighbourhood of the stricture, and be discharged externally, if

the stricture happen to be low down, or make its way into the bladder if the stricture is high up. The contents of the rectum pass through the openings thus formed into the bladder or uterus, and thus great increase of suffering is produced. Under such circumstances, the employment of narcotics internally, and more particularly locally, in the form of injection, becomes absolutely necessary. After throwing up a common injection, so as to relieve the bowels, it is a good plan to administer an opiate injection, and to allow it to remain there. By this means the sufferings of the patient are considerably alleviated, and perhaps no further inconvenience will be experienced till the time comes round again when the bowel is filled above the stricture.

It is a question in those cases how far the stricture can be relieved by the introduction of bougies. When the stricture is situated so near to the anus that you can examine it with your finger, and when you can, therefore, ascertain with considerable certainty something of the state of the bowel—when you can ascertain by such means how far the mechanical irritation of dilatation will be borne, you may cautiously employ bougies, as in the case of stricture of the urethra ; but you must employ them under the same kind of restrictions and cautions as in that case. Indeed you may find it necessary to be even more cautious in the case of the rectum than in that of the urethra, inasmuch as you are so much more uncertain when you meet with a difficulty whether you are pressing against strictured or sound parts of the gut. You must employ instruments which will not be likely to injure the bowel. Very commonly you find instruments of elastic gum recommended for this purpose, which have the advantage of being sufficiently smooth, but they do not readily accommodate themselves to the course of the canal ; I therefore do not consider them eligible instruments. You had better use rectum bougies, made of a soft composition ; and I consider, indeed, that the common plaster bougies that are used for the urethra are not sufficiently soft for a rectum bougie. There are rectum bougies made for the purpose, of a composition so soft that if you dip them into tepid water they will be immediately softened, and very well adapted for the purpose. You should never employ any force, but if an obstruction is presented, you had better withdraw the bougie, and ascertain, if you can, what the obstruction is, and restrict yourself to such a sized instrument as will go without difficulty through the strictured part, and increase the size of the stricture by degrees ; make use of the bougies rather as subsidiary than as principal means, and employ them in order to assist the effect of the other treatment which I have already particularised.

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## OBSERVATIONS

ON

## FUNGUS HÆMATODES OF THE EYE.

By RICHARD MIDDLEMORE,

Assistant-Surgeon to the Birmingham Eye  
Infirmary.

[Concluded from page 882.]

*Diagnosis.*—In a former paper I have stated that fungus hæmatodes has been mistaken for cataract, and an operation has been even undertaken for its removal. If cataract be not congenital, we rarely find it occur before the age of nine or ten, unless it be occasioned by accident: presuming that it occurs spontaneously, it is generally of a white colour, at its natural distance from the cornea does not much impede the movements of the iris, and is productive of no pain; but in fungus hæmatodes we perceive distinctly a peculiar silvery or amber-coloured substance at the bottom of the globe; the pupil enlarged, the action of the iris first becomes tardy, and then ceases altogether, the eyeball alters its shape, the sclerotica assumes a bluish appearance, the lens is seen to be pushed against the cornea\*, and the constitution participates in the mischief, the patient being first fretful and irritable, and afterwards convulsed or comatose: unlike cancer, it is not preceded by induration and pain, does not occur in old age,

\* A dislocated lens may assume somewhat the appearance of fungus hæmatodes. The following enumeration of symptoms produced by the displacement of the crystalline will be sufficient to show, that in scarcely any instance can such a circumstance be productive of the slightest confusion. If the lens be displaced by accident, its dislocation will quickly succeed the accident, and it will be distinctly recognized, pressing against the iris; vision, which was immediately before the injury as good as usual, will be suddenly destroyed; severe ophthalmia will occur; the pupil will be immoveable; the eye and head painful; and if it take place in youth in an eye previously healthy, it will generally be quickly removed by absorption; in adult, or advanced life, it may occur as a consequence of disease, and be so altered in appearance as to create some confusion, if we could not obtain a clear history of its progress. We shall find, however, that, as in the former instance, vision was not suddenly destroyed, and that the substance did not appear to be the product of gradual increase from the bottom of the globe; and, indeed, the means of distinguishing these affections are so abundant that an enumeration of them all would be extremely tedious. Mistakes may occur, but it is scarcely possible to suppose a case in which an error on this subject could not be more justly attributed to ignorance or inattention on the part of the examiner than to any lack of diagnostic signs.

nor originate in structures generally analogous to those favourable to the ravages of carcinoma; nor is it productive of diminished bulk, but on the contrary consists of the free deposition and luxuriant growth of new matter; the lancinating pain and the peculiar colour of the countenance observed in carcinoma are also wanting, and the appearance of the eye is altogether dissimilar. We find cancer usually attacking those parts which are dense and vascular in structure, whose circulation is frequently interfered with by the action of a sphincter muscle, and whose functions are in frequent requisition, as the eyelids, the lips, and the termination of the rectum, whose actions are almost constant, frequently irritable, and sometimes excessive;—parts also possessing the same anatomical characters as regards firmness and vascularity, acting as the outlets of particular secretions, as the neck of the uterus, the pyloric extremity of the stomach, and the parts around the nipple: it would seem probable, therefore, that in these cases the action of the various secretions and matters they transmit, and the variability of their circulation occasioned by their structure and functions, may be considered the main cause of such an affection; more particularly when it takes place at a certain period of life in parts where the excitement they must be acknowledged to experience is not relieved by their accustomed secretions; I especially allude to the cessation of menstruation and lactation. Knowing as we do the ill and sometimes fatal consequences resulting from the sudden suppression of the mammary and uterine secretions, can we feel surprised if a limited and chronic disease be produced by the final cessation of actions to which the system has been accustomed for a long period of years—a cessation often prematurely induced by culpable neglect or injudicious interference? Is it reasonable to suppose that some suddenly acquired vice of constitution, in a system previously strong and healthy, has occasioned these effects, when on the minutest investigation we can discover no alteration in the habits, aliments, or employments of the individuals so diseased, calculated to produce any constitutional change favourable to such a process? I do not mean to contend that a system impregnated with the products of an action, at first resi-



ding only in a part, may not on the removal of that part where its apparently concentrated effects are experienced, give rise to a similar action in another situation; nor do I mean to say that a constitution so affected may not have its destructive energies increased by circumstances calculated to injure its character and augment its defects, but merely to state my conviction that malignant actions may arise in a part from some local error, and be removed before the system be contaminated, with success, and if a proper mode of treatment be adopted, such a constitution may for a long series of years survive its anticipated wreck.

In a book written by Dr. Frick, and translated by Mr. Wellbank, may be seen a brief account of carcinoma oculi and fungus hæmatodes of the eye: speaking of the latter he says,—“This affection is to be distinguished from the true carcinoma of the eye, which has its origin, in general, from the external part of the globe or its appendages. Most commonly this disease is seated in the conjunctiva, and is analogous to the cancerous affection which attacks the mucous tissue of the fauces or rectum. Like these, too, it is at first of a mild and benign character, but is rendered malignant from improper or harsh treatment.” And afterwards, when speaking of their treatment, he observes —“That we know of no medicines capable of checking or controlling these (carcinoma oculi and fungus hæmatodes) malignant disorders; nor are the precise circumstances which render the operation of extirpation necessary, satisfactorily ascertained. In all cases of the first, or medullary fungus, the operation has failed when it has been attempted; and in some has even accelerated the fate of the patient. In carcinoma, on the contrary, the extirpation may be resorted to with greater prospect of success; especially if undertaken before the fungus has passed from a state of softness to that of a carcinomatous or schirrous hardness.” From these statements it would appear that the doctor has not studied these diseases very attentively, nor related the product of his experience in clear and intelligible language.

I believe it is just possible to confound fungus hæmatodes with glaucoma, certain forms of amaurosis, hydrophthalmia, effusion of blood within

the globe, a dislocation of the lens, and some tumors at the back of the orbit; but they are generally so dissimilar in history and progress, that I do not deem it necessary to make any lengthened allusion to the various modes of distinguishing them. With regard to a variety of morbid growths within the globe, simulating fungus, my opinion is favourable to what may be termed the safe practice. If an infant have, without any obvious cause, pain, loss of vision, and enlargement of the eye-ball, with an appearance of a growing tumor, and distention of tunics; and if, in addition to these local symptoms, the child becomes fretful and emaciated, prudence would suggest the propriety of removing the disease, (in a manner to be presently explained,) even though the shining appearance, &c. generally noticed in the true fungus hæmatodes, were wanting.

It is pretty clearly ascertained that fungus hæmatodes takes its rise in the retina, and on this account it has been presumed by an accurate observer of morbid changes, that the nervous texture of other parts may be the texture primitively affected; but setting aside the impropriety of considering diseases identical which exhibit so many shades of difference, the high vascularity of the retina compared with that of other nervous parts, its peculiar tenuity and expansion, and the nature of the stimulus to which it is subjected, preclude the aptitude of this comparison. The vascular texture of the retina, affected by a specific stimulus in that part of it which is near to the contracted portion of the optic nerve, is undoubtedly the seat of fungus hæmatodes; that portion of the retina bearing some analogy, as regards its situation near to a constricted part, to cancer, as it occurs at the lower end of the rectum, the mouth of the uterus, and pyloric extremity of the stomach. Without entering further upon the consideration of what is termed fungus hæmatodes, as noticed in various parts of the body, on the present occasion, I may observe that it has so many important points of difference from the disease of the same name in the eye, that we cannot properly identify them so far as to assert that they arise from the same cause, and commence in the same textures.

It has been stated that fungus hæmatodes of the eye has occurred so soon

after birth, that its existence must have been almost coeval with that event. Can we presume that a constitution not having an independent existence may, by a modification of the actions going forward within it, produce that general defect which may terminate in one point, and then concentrate its effects; and at the same time be so thoroughly imbued with similar principles as to continue the same actions in the neighbourhood of the part primitively diseased, if it be removed, or in some other situation? or can we imagine that a fœtus may derive a condition of system from its parent whilst residing *in utero*, productive of a disease peculiar to infancy—a disease dissimilar to any with which its parents have been affected? Children who are the subjects of fungus hæmatodes often appear healthy at birth, and even until the disease has somewhat advanced, (which could not occur if the local affection were but the evidence and consequence of the constitutional taint; indeed, if this latter opinion were accurate, the general disturbance ought to precede the appearance of the local disease, and to be relieved by its occurrence, as a mode of freeing the system from a source of great irritation and excitement); have received no blow upon the affected organ, and are not the only child of the parent whose former children have not been similarly diseased;—for these reasons we cannot admit that their system is originally impregnated with any malignant essence, nor that the disease has been occasioned by local injury, or any constitutional peculiarity of their parents. It is presumed, therefore, that it is reasonable to attribute it to some local vice, induced by the stimulus of light allowed to fall suddenly upon the eye in a brilliant set of rays, and injudiciously permitted to dwell upon that organ for a long space of time, immediately after birth. I know no more rational mode of accounting for its appearance than that now given; and if the following circumstances be taken into consideration, it will perhaps be admitted that my explanation is at least as likely to be correct, and is as well supported by direct inference from indisputable facts, as any previously offered. First, the healthy state of the child at birth; secondly, the freedom from any similar disease in the parents and their former children; thirdly, the

part in which it first appears; and lastly, its comparatively frequent occurrence in the progeny of the poor, whose comparative carelessness and want of accommodations expose their children to the liability of suffering from the sudden and overwhelming stimulus of light.

It may be said, if the stimulus of light be the cause of its occurrence in the eye, what can account for its appearance in other parts of the same subject, or in the various situations in which it is known to be present in the adult? It has been already explained, that the continuance of a depraved action in a part may give rise to general aberration. Thus we find the eye first diseased, and the alteration in other textures must be considered the consequence of absorption from the organ originally affected. The fungus hæmatodes of the adult is certainly a disease analogous to that in the eye of an infant, but, undoubtedly, it is not identical. With regard to fungus hæmatodes as it occurs in various situations in the adult, I once thought it probable that its origin might be attributed to the organization of a clot of blood, which, in consequence of the abundance of vessels with which it was supplied, rapidly increased in size, and on rupturing the skin greatly expanded and profusely bled, owing to the expansibility and little density of the structure supporting its vessels. Its colour, its consistence, and the occasional observation of small coagula in various stages of absorption throughout its substance, seemed to strengthen this opinion; but I could not produce a similar disease in animals by injuring their limbs, nor could I, in many instances, trace its origin in the adult to any cause likely to induce sanguineous effusion. When blood is effused within or upon the brain, as in apoplexy, it is absorbed, and, as far as I can ascertain, never organized. Effusion of blood in other parts is generally, although not always, obedient to the same laws; it does, however, still appear to me, that an effusion of blood, too minute for ordinary observation, may occasionally give rise to this formidable malady. May not the stimulus of powerful light, suddenly and perseveringly employed, produce that arterial excitement which, in the yielding texture of the retina and the feeble parietes of its arteries, may

in infancy (particularly if it occur at the moment of birth, when the contrast must, under ordinary circumstances, be extremely great), be sufficient to cause the rupture of some minute branch, and the consequent effusion of its contents; and thus form a nucleus for that action which we seldom, and parents never, recognize, until its progress is somewhat advanced?

In venturing upon this opinion, I do not intend to offer this cause of the disease to the exclusion of what has been previously noticed—namely, an altered action in the vessels of the retina, induced by powerful and contrasted stimulus; but am only anxious to inquire how far it is right to presume that such a circumstance may, in some instances, be sufficient to explain a few of the modifications of fungus hæmatodes in the eye of the infant—as to colour, consistence, the age at which it is first observed, the slowness or rapidity of its progress, &c. &c.

*Treatment.*—Having stated my views in reference to that texture in which fungus hæmatodes of the eye arises—having explained what structures are sometimes involved and what parts obtain an immunity from its action, and why that exemption takes place—and having also discussed the question as regards its constitutional or local nature at its origin; it will be obvious that I shall recommend a removal of those parts only which are implicated in the mischief, as soon as the disease be detected. They cannot be removed too soon.

Mr. Wardrop has recommended the excision of the entire organ, as being most likely to ensure the patient's safety, on the presumption, probably, that a portion of the optic nerve ought to be removed as well as the retina. An operation so painful and so hazardous to the patient (at that period of life at least, when, to render it at all useful, it must be performed), and so revolting to the feelings of friends, is not likely to be permitted; and as so extensive a removal of parts is, in many instances, unnecessary, I have thought it advisable to recommend merely a section of the cornea (rather larger than that usually made in the operation of extraction), and the evacuation of the humours, and the choroid, and the retina; or, if the fungus be large and the cornea small, the whole of it, and a portion of

the surrounding sclerotica, may be taken away; an operation so little painful, and not at all dangerous, and by a skilful surgeon so easily performed, that it would require, in the majority of instances, very little rhetoric to recommend it to the judgment of parents, who would at once refuse to allow the extirpation of the entire organ. It is only necessary to state to them that it will be less painful, dangerous, and disfiguring to their infant, than the continuance of the disease, to obtain generally their consent to the performance of an operation, which, at the onset of the malady, has all the advantages without the horrors of that usually had recourse to; and, if performed at a later period, does not preclude the extirpation of the eye-ball, if that measure be deemed necessary. If we compare the very little pain, the slight deformity, and the absolute lack of danger of the plan here advised, with the torture, the hazard, and the disfigurement occasioned by that commonly recommended, its advantages will be conspicuously evident.

I am at a loss to conceive why it has been thought right to remove the sclerotica, a part having no share in the disease, at that period when an operation ought to be undertaken—which is, of course, as soon as the disease be discovered; for in no malady is delay, as regards an operation, more dangerous than in this. Believing, as I do, that the sclerotica can only become involved towards its latter stage, I cannot coincide in the propriety of removing a part, the excision of which can only augment the hazard and horror of the requisite operation, and excite disgust at the terrific and severe resources of an art, the interference of which is already too frequently followed by the destruction of what its aid was solicited to save.

I have, as yet, only seen two patients who could be considered fit subjects for my plan of treatment—one under the care of a practitioner near Birmingham, and the other a patient whose case I have not thought it necessary to relate. To the former, I advised him to recommend the operation to his patient's friends, but he did not think right to accede to my wish; and to the parents of the latter I urgently recommended it, but they said they would not allow their child to be hurt, and in



accordance with this humane intention, permitted it to perish in indescribable anguish. In a land of freedom, the parents of a numerous family cannot be obliged to allow the adoption of proper measures to preserve the existence of their offspring, or I would in this instance have given a certificate in favour of coercion.

There are a variety of circumstances rendering our assistance necessary, even if called to a patient beyond the reach of any radical method of treatment. If severe pain and convulsions be occasioned by the confinement of a rapidly increasing fungus, a puncture or section of the cornea may relieve the patient's torments, irritation may be soothed, and the last hours of the little sufferer's life be rendered moderately easy and comfortable by anodyne medicines and poppy fomentations; and surely it is right to substitute the comparative tranquillity of diminished sensibility for the writhings of convulsive anguish.

When the fungus protrudes, it may give rise to a discharge capable of producing great irritation upon the surrounding skin: to prevent this source of additional suffering, it will be necessary to wipe away the discharge with a soft sponge, frequently, and afterwards freely anoint the irritated parts with some mild ointment: should hæmorrhage arise, it may generally be checked by the application of a fold of linen, moistened with a saturated solution of alum, to the bleeding surface; and should the process of sloughing proceed so far as to occasion extreme fetor, it may be corrected by the use of the chloride of soda. In addition to the annoyances attendant upon this disease, which, together with their treatment, have just been enumerated, there will in many instances be a variety of other circumstances requiring our attention, and nothing can, or ought to be considered too trifling to be remedied which is productive of the slightest inconvenience.

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#### MORBID BLOOD.

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*To the Editor of the London Medical Gazette.*

SIR,

As it is, I believe, one of the main objects of your useful publication to dis-

seminate curious and interesting facts, I take the liberty of communicating some observations I have lately made on a specimen of blood sent me by a respectable young surgeon in this neighbourhood\*.

Eight ounces of blood, by measure, were received into a cylindrical vessel about four inches in diameter. As it issued from the veins it appeared unusually black, and, on standing, no serum formed, but the whole became a concrete mass, closely resembling Damsen cheese, both in colour and consistency, having on its upper surface a thin layer of soft, pearly-white matter, and below a small quantity of loose red coagulum. This dark carbonaceous matter (which constituted 4-5ths of the whole mass) offered considerable resistance to the knife in the act of dividing it, and stained white paper the colour of burnt umber. Its specific gravity was 1.0774. Acids did not appear to act on it, but on triturating a small portion with liquor potassæ, and adding a drop or two of nitric acid to the solution, a considerable quantity of brownish-white particles were precipitated. From the pearly-white matter on its upper surface, when broken, a few drops of serosity oozed out. This substance underwent no change from the action of nitric acid, but dissolved most readily in liquor potassæ, forming with it a bright orange-coloured solution, which, on the addition of a single drop of nitric acid, instantly yielded a firm white substance, precisely resembling well-coagulated albumen. The red coagulum, which occupied the lowest situation in the mass, seemed to be composed of loose fibrine, involving a quantity of red particles, and, when broken, yielded scarcely a desert spoonful of bloody liquid. The fibrinous portion was condensed, crisped up, and rendered pale by the action of nitric acid, but did not dissolve. This acid, however, immediately produced a heavy white coagulum in the bloody liquid, and changed it to a dark-brown hue.

From this brief and imperfect analysis I think it is evident that the white substance found on the upper surface of the mass was albumen, and that a similar principle was diffused through the

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\* Mr. Smith, Jun. of Whitchurch, Oxon, to whom I am also indebted for a very clear and exact history of the patient's case.

bloody liquid, and constituted the cementing medium of the carbonaceous matter itself. Leaving it, however, to better chemists than myself to settle this point, I may observe, that such a specimen of blood as that which I have just attempted to describe, consisting of heavy, compact, carbonaceous matter, with but little fibrine, and almost no serosity at all, is a circumstance of exceedingly rare occurrence. In general, I believe, it is estimated that the serum is to the crassamentum as three to one. Cullen tells us he once saw this proportion reversed, but I have never heard of any instance in which the serous part was found in greater disproportion. In the case before us an enormous quantity of highly-carbonized matter seems to have usurped the place of the aqueous portion of the blood. By what process of the animal economy so extraordinary a change could have been effected, or to serve what purpose, I presume neither to explain nor understand, especially when it is considered that the blood in question was drawn from the veins of a robust young man, having to all appearance no other malady than slight hepatic congestion with gastric irritation, and which yielded in a very few days to ordinary treatment. Equally strange is it that the blood should have returned (as actually happened) to its healthy condition in three days after the first venesection.

In making this communication I merely profess to state a curious and interesting fact; but, nevertheless, I cannot forbear remarking, that as much new light has accrued to medical science from an exact scrutiny into the disordered states of the various secretions, it is most reasonable to expect similar advantages from an accurate examination of the circulating fluid in all its deviations from the healthy standard. Let me not, however, be thought to assert that a vitiated state of the blood is (as was formerly maintained) the first link in any morbid catenation. Such vitiation, whatever it be, must, I think, originate in some morbid condition of the solids themselves as influenced by those mysterious agents the vital and sentient principles. To be able to determine the nature of these morbid conditions would be perhaps to penetrate as far into the arcana of diseased actions as our limited faculties will carry us; and it is with a view to the attainment

of such desirable knowledge that I regard a more rigorous inquiry into the state of the blood in various disorders as well calculated to extend the boundaries of medical science.

I am, sir, your obliged servant,  
F. BAILEY, M.D.

Reading, Aug. 30, 1830.

## MEDICAL GAZETTE.

Saturday, September 11, 1830.

*"Licet omnibus, licet etiam mihi, dignitatem Artis Medicæ tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."*—CICERO.

### A SKETCH OF QUACKERY.

QUACKERY is of very ancient origin. The gentlemen of that profession can boast a long line, if not of ancestors, at least of predecessors. They may go back as far as history reaches, and find their prototypes amongst the heathen priests, who practised medicine as a means of extending their influence over the people as well as of obtaining emolument. Their temples were often made places of resort for those afflicted with disease; but the priests, like their modern copyists, veiled their practices with so much mysticism and secrecy that we should now have no information concerning them were it not for the ludicrous pictures which some of the satirists have left us of their impostures. From one of these we learn that those who came to consult *Æsculapius* were directed (after having purified themselves in the lustral water) to lay their offerings on the altar, and then recline on couches prepared for them; and as the god was supposed not to declare his will except in dreams, the patients were directed to repose on the skins of sacrificed rams, in order to procure pleasing visions. When they all appeared asleep, the priest, clothed in the garb

of Æsculapius, entered, and with much solemnity revealed to each the remedies fitted for his relief. By the regulations devised for the management of this sort of temple-worship (if we may so call it), it was provided that no part of the sacrifices should be consumed outside the walls of the temple, and that no individual should, on any account, be allowed to die within them. We cannot deny to these measures the merit of prudence and sagacity, as one tended to support the purse of the fraternity as effectually as the other to maintain the credit they so long enjoyed.

People may smile at the rude artifices of the priests, and perhaps even express pity for the delusion of those who so long and so blindly deferred to them; but they should recollect that in our own times impositions just as bare-faced have been practised by many individuals: not to name any of the present day, we may instance Perkins, who is still within the recollection of many; and Mesmer, who was but a little before him. Imposture, when detected and exposed, may be constrained to change its guise, but can never want materials to work on so long as weakness and credulity are attributes of man.

Mesmer was a German by birth, a physician by education, and by constitution an enthusiast. Early in life he wrote a thesis for the purpose of proving that the planets exerted an influence not only on the body of the earth itself, but on the bodies of those who inhabit it. This was regarded merely as a school-boy essay, put forward to display ingenuity in maintaining a paradox, or to revive the then exploded doctrines of the astrologers. The author and the essay were soon forgotten, but Mesmer's spirit was too sanguine and energetic not to seize any occasion that presented itself of emerging from obscurity—and such a one soon occurred. The discovery of the galvanic agent or fluid

having given rise to discussions relative to its identity with ordinary electricity, and also to a contrast of its powers and properties with those of magnetism, Mesmer boldly entered the lists, and announced that he had at length discovered the great arcanum of nature, for which he had hitherto toiled and searched in vain; that no one could now be so sceptical as to deny the existence of a subtile agent which pervaded all space, connected the earth and the planets, and exerted its influence upon each of them as well as on every thing that moved upon their surface. Assuming this agent to be magnetism, he asserted that he had discovered the means of applying it to the living frame, and of making it an effectual remedy against all diseases. When thus employed, he termed it "*Animal magnetism.*" Prophets, it is said, are seldom honoured in their own country. Mesmer, and his "subtile agent," found little favour in Germany, though it has been long known as the hot-bed of demonology. He travelled from place to place, but without success, until, in a lucky hour, he bethought him of offering to the gay Parisians (as the best tribute he could pay to their cosmopolite views) universal and uninterrupted freedom from disease, at the moment when they were proclaiming to the troubled spirits of the world emancipation from the trammels of despotism. He came amongst them as a deliverer—he was received with enthusiasm;—like another Cæsar, "he came, he saw, he conquered." He threw open his house for the reception of visitors, and it soon became one of the most fashionable places of resort in the city. People flocked to him with imaginations heated by curiosity; because they understood not, they believed,—and belief in the principle led the way to delusion in its practical application. Thither went persons afflicted with all manner of ailments; "a peccant humour" circulated



in their veins—it was a universal evil, and could be met only by a universal remedy—it must be neutralized or extracted. The “subtile agent” could do both; nay, it could do more; it could correct the “germ of ill” which every living thing brought into the world at birth, and which lurked in the frame unseen and unobserved by all save one—the magician who possessed the secret. Wondrous cures were performed—all ills that “flesh is heir to” were alleviated; health was restored to those who lost it, and perpetuated to those who had never felt its privation. Reports of cases and cures were constantly published, well attested, and duly authenticated, not only by the patients themselves, but by other persons who had seen all these miracles with their own eyes. The treatment as conducted by Mesmer and his assistants in the “practice-room” of his temple of health was as follows:—

An oval box was placed in the middle of the room, in which were said to be arranged a number of magnets, so disposed as to produce and evolve the magnetic influence. Around the box were ranged in regular order the persons to be magnetized. A chain was passed from one to the other, so as to form “a magnetic circle,” and each individual, moreover, held a rod, which was attached to the box, so as to receive more directly the influence emanating from it. These preliminaries being adjusted, Mesmer’s assistants (who were selected for their graceful air, and striking appearance) placed themselves one before each patient, and began the process of “manipulation,” as it was called, by laying their hands on the shoulders, and drawing them slowly down to the wrists; this they repeated several times, after which they proceeded to press, and “further manipulate” the affected part so as to favour “the crisis;” or in other words, to expedite the exit of the “peccant humour.” De-

licate and susceptible persons at first experienced a palpitation and yawning; then a creeping sensation in the manipulated part. If any of them, particularly females, were more excitable than others, their emotions were communicated to the rest, as all nervous excitations are propagated—by a sort of imitative contagion. At this critical juncture the doors were suddenly thrown open, and Mesmer started into view clothed in a silk robe, and bearing a wand in his hand, which he moved with the air of a magician, and seemed to control the vital energies of those before him. Some of them, especially delicate females, said they felt a cold “aura” or vapour circulating through their frames, following the direction of the all-powerful wand as it moved before them; and almost all declared that they felt as if the influence of the magnetism was concentrated towards the part where they felt pain, or in the organ which was the seat of their disease. Cures innumerable followed these measures, and were recounted in every place, public and private—to disbelieve was heresy: “facts are stubborn, and cannot be gainsaid,” was the triumphant remark of the proselyte, whenever a doubt was even whispered. We may just add, however, that Mesmer did not trust solely to his manipulations. Madame Campan, in her *Memoirs*, states, that her husband was seized with inflammation of the lungs, and sent for Mesmer, who came and manipulated or magnetized him in her presence. He returned, however, next day in her absence, and had the patient bled and blistered.

There is a tide in the affairs of men: Mesmer took his at the ebb,—it flowed to fortune. But every tide has its reflux; so had Mesmer’s. He offered his secret to the government for a large sum: a commission (ominous word) was appointed to investigate his

pretensions, which were weighed in the balance, and found wanting. The exposure which followed was ruinous, and many cases of injury and malpractice to individuals, which would previously have passed unnoticed, were now listened to, and tended to add disgrace to ruin. Mesmer retired to the country, or, in theatrical phrase, went "starring" in the provinces, but his star had set never to rise again. D'Erlon, his chief assistant, (for he had several assistants, as well as decoys, well instructed in every form of "puff—direct, oblique, and collusive,") at first resolutely opposed the current which set in against him, but he was obliged at length to give way, and follow the example of his master, having succeeded, however, in amassing a considerable fortune whilst the tide of fashionable folly was with him.

Amongst the followers of Mesmer, was one M. le Marquis de Puysegur, a "good easy man," just of that stamp which rendered him fit to be the victim of any sly rogue who would but take the trouble to dupe him. The Marquis thought Mesmer's application of the magnetism a little too violent, and that if modified it might be made to act as a sedative, and soothe rather than excite. After various trials, he discovered that he could produce all the desired effects by diffusing the magnetic influence over the stem of a tree, from the branches of which it might be conveyed in a form less concentrated to the persons of those who required it. The first trials were made on the members of the Marquis's family, and succeeded completely;—they said that the magnetism stole gently over them, and made them feel calm and tranquil, as if in a trance. The Marquis in an ecstasy posted off to his chateau, resolved to diffuse the blessings of his discovery amongst his tenantry. He forthwith magnetised a tree, ranged his do-

mestics and peasants around it, each holding a branch in his hand—doubtless it was a drooping ash that was selected for the purpose. The effect was soon manifest; their eyes became half closed, the countenance lost its expression, and all, after a time, passed into that ecstatic state between sleeping and waking so favourable to the views of the charlatan. Thus commenced the reign of somnambulism. What an excellent spectacle for Cruickshank! what a picture it would make if hit off with a few touches of his pencil! But would it not be just as amusing to transfer to paper a sketch of a modern "practice room," in Harley-Street. There may be seen at one side a box (the emblem of Mesmer's), from which issue a number of elastic tubes, like those of so many Turkish pipes, and at the opposite side a number of fair ladies ranged in a row, each with a pipe in her mouth; and all sedulously employed in "inhaling"—not magnetism, that's exploded—not oxygen, that's out of date—but something quite new, that was never heard of before—that was never thought of by chemist or experimentalist,—but which came by inspiration to one whose mind is wholly exempt from all the prejudices of science.

Mesmer and the magnetists were soon effectually superseded by the Marquis and the somnambulists, and each had his day in France. But the good people of this country were of too calm and investigating a spirit to be deluded into a belief of such puerilities; at least, so they thought.

It happened, however, unfortunately for our countrymen's character for discretion and caution, that amongst other foreign arrivals the public prints had to announce, about five-and-twenty or thirty years ago, that of a gentleman of no inconsiderable pretensions, who had a claim on the gratitude of Englishmen, inasmuch as he

most disinterestedly came amongst them to diffuse the blessings of a secret which he possessed, and which he had denied to his own countrymen;—he professed to have discovered a simple method of curing all diseases, without pain or risk. Inquiry was at once on tip-toe. Visitors in considerable numbers flocked to Leicester-Square, the then residence of this gifted sage: he was a shrewd, homespun Yankee, named Perkins, late of New York, formerly of Pittsburgh, and many other places. Perkins assumed the garb of a Quaker, and soon became patronized by the members of the Society of Friends: if we mistake not, they built by subscription a house in Bristol for the reception of persons to be treated according to the new method, which was found to be vastly cheap, as no “doctor’s stuff” was required, or even admissible; it was, moreover, safe and pleasant—no small recommendations; while as to any restriction in diet or living, that was altogether out of the question. Perkins, like other men of his class, seemed to have some notion of “peccant humours” circulating through the system, and that if these could be “drawn out,” health would be restored. Having heard something of electricity being generated by the contact of two different metals, he pretended that he could draw out from any pained or diseased part the humour which caused it, by means of two small instruments, which from their composition and effect, he called “metallic tractors.” We have seen a pair of the tractors, which were purchased from Perkins for five guineas, their intrinsic value being about as many farthings. They were about three inches long, tapering and club-shaped, and appeared to be made of type-metal. In order to draw the “peccant humour” from a given part, one of the tractors was placed steadily upon it,

whilst the other was drawn gently along the surface in different directions, which was continued for some time, or until relief was obtained. The doctor soon became quite “the rage,” the tractors had a run, and numerous cases of success were published. The lame, the blind, and the diseased, all came forth from their retirement, to submit their limbs and bodies to the “tractors,” and they were wonderfully benefitted. But the tide soon turned, and left Perkins on the shore friendless and scorned. He returned to America with his ill-gotten gains. The first exposure of this strange delusion was made in Bath by Dr. Haygarth, who admitted into the hospital several patients, announcing to them that they were to be treated by the tractors. For the metal instruments, however, he substituted pieces of wood and of sealing-wax, and they worked marvellously well,—several declaring themselves freed from pains and illness, which had long afflicted them.

We do not recollect whether the celebrated Doctor Graham lived and flourished before Perkins appeared upon the stage; but, ’tis no matter: he too possessed a secret—a very valuable one, that of extracting money from the credulous; but he professed another, that of restoring health and vigour to the weak and the impotent. The doctor crept on slowly for some years, trying his hand at various expedients, and with various success. We have not heard that he went so far as to make money by retailing bread to his patients, pretending that it was medicated, and prepared under his own eye; or that he ever ventured to assert that he could cure diseases by anticipation, or that he had any persons on his list as “preventive patients;”—these steps in the march of intellect were reserved for one of his successors. The doctor, however,



was an aspiring genius; he wished to be in the purlicues of the court, and accordingly he founded a temple close to St. James's, which he dedicated to the Goddess of Health and of Youth. Thither flocked numerous worshippers to consult the high priest of Hebe, bringing abundant offerings to the altar, so that fortune flowed in as fame extended. But the priest could not minister to so many votaries; the doctor was obliged to admit a colleague to share his labours and profits. The colleague was a pettifogging attorney,—fit associate for a quack. They quarrelled about the division of the spoil; the temple got into Chancery—the doctor into the Bench—the goddesses disappeared—and the votaries fled.

Thus it is that delusion ever walks abroad, now in one guise, now in another; the follower of each new empiric appealing to experience—seeing all the facts which seem to favour their prepossessions, and shutting their eyes against all others. “Facts are stubborn,” is the universal argument. Alas! it is too true, as remarked by Cullen, that “there are more false facts than even false theories afloat in the world.” Mesmer and his magnetic box found fitting successors in Solomon and his balm of Gilead, and the tractors of Perkins are revived in the “liniment” of a living charlatan. Individuals may cease to exist, but the spirit which animates them passes, as if by transmigration, into some fitting representative, and so artifice is ever putting forth its unblushing front,—“*aliusque et idem nascitur.*”

When we cast a retrospect over the different groups of persons here collected together, we find certain characteristics common to them all, viz. credulity bordering on folly in the votaries (for we cannot assign any other name to the blind followers of such men as Mesmer, Perkins, Graham, or St. John Long),

and duplicity and artifice on the part of the guides in whom they confide. In all these “systems”—(to use the word so much dwelt upon by the worthy Coroner on a late inquest)—the principles are identically the same: from the “subtle fluid” of Mesmer to the “aerid matter” of Long, all assume that there is some morbid humour which produces disease—all of course hold that this is to be corrected or removed—and, what is remarkable, all assume that the same identical remedy is applicable to every period of life, as well as to every disease and every constitution of the human race. Yet were we to ask a believer in the efficacy of the tractors, what he thought of the magnetists, he would undoubtedly say they were credulous dupes, and those who now devoutly believe in the efficacy of “inhaling,” would as certainly pronounce the same verdict against the followers of any other charlatan, save him they worship. Each can see the folly betrayed by the others, but none can shake off the delusion which distempers his own vision. Most of us have at some time or other paid a visit to one of those asylums wherein are congregated persons afflicted with different forms of mental hallucination: as they collect around us, each telling his own tale, how often do we see an incredulous smile on the faces of the others, or receive a whispered intimation that the speaker is a driveller, and unworthy of notice? Each perceives the other's aberration—none seem conscious of their own:—just so it is with the followers of any fashionable quack.

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#### INSUFFICIENT POWERS OF THE MEDICAL CORPORATIONS.

An evening paper (the Sun) after some pertinent remarks on the termination of the inquest in Miss Cashin's case, in-

dulges in the following strain of interrogatory :—

“ — But ought the public to remain exposed without legal protection or warning of such practices? Why does not the College of Physicians bestir itself on such occasions, and on such objects? Does it exist (like many other worn-out corporations) only for the benefit of the few who contrive to get the management, an incubus on science? Has its President no other functions than to pander for place and patronage at court? Has the College no corporate public duties? If it has not, they ought to be imposed, and the College compelled to perform them.”

We leave unnoticed, as unworthy of any answer, that query in which the writer, by introducing a personal reflection, betrays that private feelings mingle with the discharge of his public duties; but we have a few remarks to make on the other interrogatories. The writer seems to wonder that the public are not duly warned of the egregious and dangerous quackery which is going on before their faces every day of their lives. He may wonder; but he should rather inquire what sort of warning would take effect: how are people to be awakened to their danger who are long in the habit of this sort of delusion, and confirmed in it by the authority of high names? How is the spell to be broken? How is reason to be restored? Though we must confess to us it seems almost idle to ask such questions. Every individual of those few who can think without the biassing influence of authority, must see that there is nothing for it but the direct interference of the legislature. Quackery must be prohibited by the law of the land; and the measures adopted for its suppression must be simple, speedy, and decisive. To stay to argue the propriety of such measures, or to delay their adoption till the mass of the

public are convinced of their reasonableness, were to wait till doomsday. This is clearly one of those points on which the majority are *non compos*, and manifestly incompetent to manage their own affairs; they must have proper guardians, and proper steps ought to be taken that the deluded fall not into harm's way. Restraint must be imposed, and right-mindedness will follow. We cannot think the world will always continue in its folly: on the present question it probably requires but a fair opportunity of being convinced, and the end will fully justify the means. As to warnings, it has been long, long ago put beyond a doubt, that there is no virtue in that mode of proceeding; the effect of warnings, we conceive, to be perfectly hopeless: “neither will they be persuaded though one rose from the dead.” The remedy must, therefore, be rather sought in the other part of the writer's quere, why the public are suffered to remain without legal protection? But he runs on rashly and without knowledge when he tries to lay the blame at the door of the College of Physicians: he very simply supposes that the College has the power to punish such offenders as Long, and that it is through sheer indolence they suffer such power to lie dormant, to the great detriment of the public: he is, in a word, most gloriously ignorant of the state of the law, so far at least as it is supposed to be connected with the powers of the medical corporations. The ignorant and fatal quackery of St. John Long, he need not be told we apprehend, was of a surgical character, which lies entirely beyond the cognizance of the College of Physicians; while the College of Surgeons most nearly affected by the manual operations of the quack, have no power whatever to punish or restrain him. As the law at present stands, any individual, however ignorant

or mischievous, may undertake the practice of surgery, and commit what injuries he chooses, without being liable to be brought to any account for them by the College of Surgeons: he must, however, if he be prudent, and make proper use of the example of Long, keep beyond the clutches of the law; he will be pleased to recollect that he must not, unqualified as he is, inflict death or any kind of bodily injury on the deluded people who apply to him for his remedy; nor will his intentions serve as an excuse for the mischief he perpetrates. The College of Physicians, however, we may add, have a shadow of power: in cases of medical practice without their leave—malpractice more especially—they have with abundant restrictions, a semblance of authority; they may impose a fine of *five pounds* a month during the continuance of such unlicensed practice, but the fine is only recoverable by a suit at law! To such a mere mockery, through the revolution of time, the depreciation of money, and the ingenuity of our legal friends, has the power of the College been reduced. Our professional readers will owe us nothing for these remarks; they may serve to set right some ill-informed persons out of the profession—like the writer in the *Sun*—whom we have frequently heard inquiring, especially during the late inquest, why the College of Physicians did not take cognizance of those impostors?

We have, however, a question to put to the Society of Apothecaries. It is well known that Mr. Long occasionally provides his patients with medicines, and it appears that, notwithstanding his abhorrence of physic, he administered something which he took from a bottle to Miss Cashin. Does not this bring him within the scope of their act?

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## LONDON UNIVERSITY.

WE observe, by the advertisements, that the Council of the London University have sanctioned a new arrangement in the anatomical department of the medical school. Perhaps further changes might have been made with advantage, were it not, unfortunately, the opinion of sage counsellors that—

— “Patches set upon a breach  
Discredit more in hiding of the flaw,  
Than did the flaw before it was so patched.”

We are glad to find that it has been determined that Mr. C. Bell is to deliver the lectures upon physiology, means having been found to prevent him from persisting in his resignation, and it is added, that the anatomical views connected with that branch are to be exhibited by himself. Mr. Bennett has been advanced to the office of joint-professor, and he is to give a course of “general anatomy,” as it is called, in aid of that delivered by Mr. Pattison. We hope that the pupils will benefit by these changes, and that there will be no longer any cause for the discontent which was manifested so openly during the last session. The title, “general” anatomy, affords a wide range for Professor Bennett to select the subjects of his lectures; and he has been strengthened, we perceive, by the association of Mr. R. Quain with him in delivering the demonstrations, and attending to the dissecting-rooms.

We hear, and have reason to believe the report to be correct, that the late attacks upon Mr. Pattison, made by a pupil through the medium of the *Lancet*, have seated that gentleman more firmly in his chair, the Council being determined to shew that they are not to be brow-beaten by their own students: if they yielded to the mode of attack lately adopted, no professor would be safe.



EXPENSE OF LECTURES NECESSARY FOR EXAMINATION AT THE  
COLLEGE OF SURGEONS.

WE think the Council of the London University have acted injudiciously in fixing the fees of the medical classes at so high a rate. It will be seen by the annexed table, sent to us by a correspondent, that they are considerably higher than elsewhere.

London University.			At the other London Schools.			
	£	s. d.	£	s. d.	£	s. d.
Anatomy, Two Seasons ...	14	0 0				
Physiology .....	6	0 0				
Demonstrations .....	12	0 0				
	<hr/>		32	0 0	Perpetual .....	21 0 0
Surgery, Two Seasons.. ...	8	0 0			Perpetual .....	5 5 0
Practice of Physic, Six					Two Courses ...	5 5 0 ... perpetual 6 6 0
Months .....	6	0 0			Two Courses ...	6 6 0
Chemistry, Six Months ...	7	0 0			Two Courses ...	5 5 0
Midwifery, Six Months ...	5	0 0			One Course.. ...	3 3 0
Materia Medica, One						
Course .....	3	0 0				
Matriculation Fee .....	1	1 0				
	<hr/>				<hr/>	
	£	62 1 0			£	46 4 0
	<hr/>				<hr/>	
Clinical Lectures .....	4	0 0			Clinical Lectures, gratis.	

## HOTEL DIEU.

*M. Dupuytren on Wounds produced by Fire-Arms, especially those received in the late Revolutionary Struggle.*

AN interesting course of clinical lectures on this subject was begun by M. Dupuytren on the 19th August. It was his express intention to have begun those lectures earlier, and to have seized this opportunity of comparing his recollections of 1814 with recent events; but the multiplicity and constancy of his occupations during the eight or ten preceding days, completely prevented his putting the former part of his design in execution till now.

His introductory remarks related to the state of the hospital recently, at the period in question. The first combats took place in the Palais-Royal and in the streets St. Honoré and Richelieu on the evening of the 27th, when six or seven gun-shot cases were carried into the Hotel Dieu; but it was on the day of the 28th and morning of the 29th that the greatest number was received. The height at which the thermometer stood during the two latter days was remarkable; and it may not be unworthily of notice, that it was in summer,

and at a like elevation of temperature, that the great insurrections of the Revolution occurred. The fact is left to the physiologists for explanation; it will be more important for us to consider the effects of this state of the atmosphere on the wounded patients. The vulgar opinion is, that hot weather is unfavourable for the treatment of wounds—the contrary is the truth; hot weather, in fact, is never the exciting cause of hospital sore or gangrene. M. Larrey has long since made this remark: he observed that in Egypt the cure of wounds went on far more easily and rapidly at a very extraordinary elevation of temperature than in cold countries—in Russia, for example. Several, however, of the fatal cases which have occurred in the Hotel Dieu may be indirectly attributed to the temperature; for many of the patients oppressed with the heat, threw off their garments and bed-clothes while exposed to currents of air injudiciously established in the wards, and thus were attacked with severe abdominal inflammations. Cases of arachnitis, pleurisy, pneumonia, and liver complaints, became frequent—many of them fatal; while the smell of the wounds and the crowded wards had apparently no ill effect. It ought to be

made an invariable rule in hospitals never to open opposite casements at one and the same time; but first those of one side, and then the other, alternately.

The Hotel Dieu was most centrally situated with regard to the principal scenes of action, and hence received by far the greatest number of the wounded—about 400; those chiefly who were injured in the combats of the Grève, the Chatelet, and the Louvre. The hospitals St. Antoine and St. Louis were also pretty well supplied. It must be observed, that the combatants in these struggles were very differently circumstanced; on one side there was a numerous army (not less than 9 or 10,000 men), well provided with arms, well disciplined, and expert; on the other, throngs of people in a state of excitement, full of ardour and courage, but without order or command, their only arms—pistols, old muskets, fowling-pieces, broad-swords, foils, and some cannon (when they could be procured), but cannon without proper ammunition, they being obliged to charge their pieces of ordnance with paving stones, wedges of wood, lumps of lead, billiard-balls, &c. It will hence be easily accounted for why the wounds inflicted by the military were so much more serious than those made by the citizens. Much less ravage, however, has been produced by cannon-balls than might have been expected, in consequence, no doubt, of the irregularity of the streets and the numerous indentations and places of shelter; for more mischief was done by case-shot, which was very abundantly made use of. Nor has any instance been observed in the Hotel Dieu of the total removal of a limb by artillery; portions have been carried off by pieces of balls, &c.: one woman has had a great part of the deltoid taken away by a piece of bullet—the head of the humerus is exposed, but she is going on well. A young man, in the ward Sainte Marthe, has received a severe wound in the chest; the ball entered at the anterior superior region, and has been extracted from the back: he also is pretty well. It was asserted that the soldiers used *chewed balls*, and the people hammered ones, in order to render the wounds the more grievous. This was not true. To chew a ball is by no means so simple a business, and all that the best teeth can do upon it is to make a number of holes on the surface with-

out prominences—not certainly tending to render the projectile more murderous; and as to the compressing of the bullets, if a hammer was at all employed for the purpose, it was simply to beat them out, so as to make them fit the fusils whose calibre would not otherwise admit them. It was asserted, too, that some of the arms were poisoned; but this also was a complete falsehood.—*Journal Hebdomadaire.*

[To be continued.]

#### LA CHARITÉ.

THERE is scarcely a subject more contested in surgery than that which relates to the excision of the articular extremities of the bones of the limbs. These operations, however, have been regarded with much less prejudice in England than in France, if we except Moreau, and Roux, the enterprising surgeon of La Charité. From the practice of this latter gentleman we subjoin two cases of this description which have recently occurred.

##### CASE I.—*Caries of the Bones of the Fore-arm, at the Wrist—Excision of the diseased parts.*

M. T. aged 42, was admitted on the 27th of May into La Charité. In the region of the wrist a swelling of the soft parts presented itself, with a fistulous opening on the dorsal surface leading towards the articular portion of the radius. The limb was extremely wasted; its movements nearly lost. A probe introduced into the fistula only came into contact with the bones of the fore-arm. Those of the carpus were not denuded. The suppuration was constant and abundant. The patient attributed the disease to a sprain of the wrist, received about a year previously, in making some exertion. The swelling and inflammation which followed were not subdued, notwithstanding the application of leeches and other antiphlogistic means; it gradually became more chronic, was regarded as a white swelling, and amputation proposed. It was for the purpose of undergoing this operation that he came into the hospital.

M. Roux, believing that the caries was limited to the articular extremities of the radius and ulna, resolved to excise them; intending to remove the bones of the carpus also should they be found to have participated in the disease. On the 5th of June M. Roux

proceeded in the following manner:—The patient was laid upon a table, with the right arm in pronation; an incision of about three inches was made on the external edge of the cubitus, passing down to the wrist-joint; all the flesh was divided down to the bone, and then detached from it upwards and downwards; then the instrument introduced between the bones denuded the ulna for a short space, in a circular direction. A narrow compress passed in this interval served to draw the bone a little outwards from the axis of the limb; it was sawn through, after which the ligamentous connexions were cut, and a portion of the ulna, two inches in length, was detached without difficulty. The tendon of the posterior cubital alone was divided, and the muscular parts had undergone only a little contusion. The same proceeding was adopted on the outside of the limb; the only tendons which were sacrificed here being the abductor and proper extensor of the thumb. The disarticulation was here more tedious and difficult, in consequence of the articulating surface being greater than that of the cubitus. The finger was now passed over the exposed joint of the carpus, which was found to be unchanged. The sides of the wound were then approximated, and kept together by several sutures. No inconvenience followed the operation, but the union took place rather slowly. After this was accomplished, however, the cicatrization went on rapidly, and was almost completed at the end of a month, during all which period the limb was kept in a state of immobility by means of an appropriate apparatus. The portions of bone which had been excised, were found to be completely carious.

*CASE II.—Caries of the Bones of the Right Leg—Excision.*

D. M. aged sixteen years, well grown, and of robust constitution, had sprained his ankle seven or eight months before: the swelling at the time was so great as to prevent him from using the limb. Afterwards, abscesses formed about the joint, and the parts subsequently became indurated, notwithstanding the use of fomentations and leeches. When this patient was admitted at La Charité there were fistulous openings discharging a quantity of matter, which, on examination, were found to lead to the extremities of the

tibia and fibula. The limb was useless, and amputation must have been had recourse to had not the idea of excising the diseased portions of bone suggested itself. On the 29th of June M. Ronx adopted the following proceeding:—The patient was placed on his back; an incision four inches in length was made on the outer side of the ankle, so as to include the external part of the joint; a second incision met the first at right angles, its direction being across the joint; a flap was thus made, and dissected back without being removed, while the tendons were put to one side; a chain saw was then passed between the bones and the fibula, about half an inch above the articulating surface; the tibia was afterwards dealt with in a similar manner, and the parts removed, though not without difficulty to the surgeon, and acute pain to the patient. The soft parts were then brought together, as in the former case, and the limb placed in a fracture-box.

Next day the patient had a good deal of fever and restlessness, which were attributed to the apparatus being rather too tight: he was bled. On the fourth day the wound was dressed, and the sutures removed: no union had taken place; the flaps separated; but otherwise the parts were healthy, and went on to granulate favourably.

There was no sensible disease of the articulating surface of the astragalus, nor even of the tibia and fibula which had been removed; but the extremities of these bones were eroded, and the ligaments swollen, and as it were fungous. The portions of bone excised were larger than in their natural condition, and on being cut through, shewed signs of being inflamed.

## HOSPITAL REPORTS.

### ST. GEORGE'S HOSPITAL.

#### *Hernia.*

SOME cases of hernia worthy of notice have lately occurred at this hospital. They deserve consideration, because they illustrate points not commonly adverted to in professed treatises on this subject.

*CASE I.—Femoral Hernia strangulated for five days—Operation—Immediate Support—Death ultimately from exhaustion.*

Mary Williams, 75 years of age, admitted June 5th, 1830, under the care of Mr. Hawkins.



Has femoral hernia on the right side, apparently consisting of omentum and intestine, and turning up over the edge of Poupart's ligament. Tumor about the size of a small egg, hard, and painful. Skin neither red nor placed upon the stretch. Some tenderness on pressure of the hypogastrium and right inguinal region; none above; no tension of belly; disposition to sickness; pulse rapid, feeble, slightly intermitting; tongue dry, and brown.

Has had the hernia down occasionally for twenty years, but it never was strangulated before. Gives a very imperfect account of its present descent, but says she has had no motion for five days, and has been sick for two. Has taken medicines, and the taxis was ineffectually employed to-day.

Warm bath. Taxis immediately.

These measures were productive of no benefit, and at 4 p.m. it was determined in consultation to perform the operation. To do so, indeed, gave the only chance; but what could be expected from operating on a hernia strangulated (at all events incarcerated) for five days, in a feeble valetudinarian of seventy-five?

The gut consisted of a single knuckle, of very dark colour, tightly compressed by the stricture, with blood-coloured lymph attached to it, and blood-coloured serum in the sac. It adhered closely to a small portion of omentum, and was connected, by some recent soft lymph, to the neck of the sac. The omentum varied in appearance, but was generally healthy. The stricture was half an inch in length, partly in Gimbernat's ligament, partly in the neck of the sac: its division was necessarily tedious. The gut was returned into the belly, the omentum left in the sac. The edges of the wound were brought together by two sutures, plaster, compress, and roller.

Beef-tea; arrow-root; fomentation.

6th.—Was much better yesterday evening and during the night; has experienced nausea several times, and vomited once. At present (11 A.M.) she complains of pain, and some tenderness on pressure, in the neighbourhood of the wound, which was tumified and puffy. Pulse rapid, full, occasionally intermitting. Tongue dry, dark-brown in centre; bowels opened once, after an injection of barley water.

R Hyd Sub. gr. iij. Pulv. Ipec. c. gr. v. M. sumat. stat. et post hor. iv. Pergat c. fotu.

*Vespere.*—Rather delirious. No stool since the morning. Suffers from considerable tenderness on pressure in the neighbourhood of the wound, where an indurated lump is felt, evidently situated more deeply than the subcutaneous cellular membrane. The upper

end of the wound is uniting; some bloody serum flows from the lower.

Bandages, &c. removed; wound dressed, Some brandy occasionally.

7th.—Much the same; occasional vomiting of dark fluids; the delirium has given way to the drowsy dozing stupor of senility. Bowels not yet opened. A castor-oil enema was thrown up, and brought away some figured feces.

R Pulv. Rhei, gr. x. Magnes. Ustæ, gr. x. Tinct. Rhei, ʒj. Haust. Pimentæ, ʒx. M. stat. sum.

*Vesp.*—Lower.

Sp. Æth. Sulph. c. ʒx. Sp. Ammon. Arom. ʒxx. Mist. Camph. ʒj. M. 6tis hor.

8th.—Rather better. Says she likes nothing but brandy, which the good lady swallows with freedom and *gout*; in fact, she spends her time between that and drowsy dozing. Still general tumefaction and hardness about the wound, the edges of which are tender, and suffused with a purplish blush.

Next day the improvement was still more marked; both sutures were removed, and she had some port wine. The motions from the bowels now became regular and free; she complained of hunger, and picked up a little strength. The pulse had the feeble, irregular, yet full round beat of old age; the tongue was generally dry, and brownish in the centre; the intellectual faculties were benumbed and obtuse, beneath a kind of lethargic drowsiness. The wound partook of the stupor of the system: a constant purple blush had settled around it; large flabby granulations crept up from its recesses, and it seemed to be doubtful whether it would end in an indolent sore, or on some slight occasion be exposed to the ravages of sloughing. The hard lump to which we have already alluded, had partially subsided, whilst some small coagula had been extricated from the wound.

In this state the patient continued, the wound improving in a slight degree, till the morning of the 19th. Then she had a rigor, not followed by re-action, but by augmented debility and deeper torpor. Bark and ammonia were added to her cordials and support; the wound suppurated freely, and once or twice a small slough was detached from its sides; the back became sore from unavoidable pressure; the prostration increased; and on the 28th life was finally extinguished.

*Sectio Cadaveris.*—Body much emaciated.

*Thorax.*—Nothing particular. Heart large and flabby; great vessels pretty healthy, considering the advanced age of the patient.

*Abdomen.*—A few adhesions of some date between the convolutions of the intestines. A portion of the ileum, a few inches from

the cæcum, adhered to the internal opening of the left crural ring. The adhesion was not very recent. The gut was dark coloured, but not from inflammation, and there was no ulceration, nor mark on its mucous membrane: this was the portion of intestine that had protruded, and its recovery had been complete. The omentum sent down a prolongation, which passed through the crural opening, and then swelling out into a small but consolidated mass, still lay in the bottom of the external wound: this had evidently formed the hardened mass, and no doubt had been inflamed.

The stomach and colon were singularly dragged down and distorted by the protrusion of the omentum.

The wound itself looked sloughy; part of the sac remained; Gimbernat's ligament had been freely divided.

In the cellular membrane behind the symphysis pubis were a drachm or two of pus.

*Cranium*.—Not examined.

**CASE II.**—*Inguinal Hernia irreducible for five days—Operation—Immediate support—Successful termination.*

James Wheatley, æt. 45, formerly a soldier, admitted July 3, 1830, under the care of Mr. Hawkins.

Large inguinal hernia on the left side, apparently intestinal and omental; tender, especially above, with some tenderness of the abdomen; extremely hard, tense, and painful in the inguinal canal, soft and compressible below. Feels very weak; pulse scarcely perceptible; extremities cold.

Has had hernia for two years; it used to recede when he lay down. Rupture has been irreducible for five days, with constant nausea and retching, flatus, and a sense of dragging at the epigastrium; no motion for the same time. Was bled yesterday, and has had the taxis, with calomel and opium.

Warm bath; taxis.

No impression being made upon the tumor, the operation was performed at a quarter past 10 p.m. There were about four inches of small intestine, concealed by much omentum, to which it was united by red recent lymph. The gut was of dark red colour, but became brighter on exposure. The gut was first returned, and then the healthy omentum. A small portion of the latter being bound to the bottom of the sac by a long and narrow band of lymph, this latter was divided, and both ends tied, as two or three vessels contained in it bled smartly; several small arteries were also secured in the superficial parts. At the bottom of the sac was still a long dark-coloured prominence, looking almost like a piece of intestine. On closer examination it was thought to be a varicocele, covered by the posterior part of

the sac. One suture was employed to hold together the lips of the wound.

After the operation the patient was so low as to require sal volatile, which he vomited, and brandy and water, which he retained. In the next two hours he swallowed six ounces of brandy, when the pulse rose, he grew warm, and fell asleep.

At 6 p.m. he awoke suddenly, with a sensation of uneasiness, and on inspection there was found to be a good deal of bleeding. The wound was opened, and two small arteries tied in the superficial parts, after which it was dressed again. In the course of an hour an injection was given and retained, and this was followed by the following draught.

Inf. Ros. ʒiiss. Mag. Sulph. ʒij. 6tis hor.  
Beef tea.

12, p.m.—No motion.

Repetatur enema.

Soon after this there was a copious evacuation, followed after a time by several more. There was still some depression, but no symptoms of peritonitis.

4th.—Mist. Camph. ʒx. Sp. Ammon. Arom. Tinct. Hyos. aa. ʒss. 6tis hor.

On the 5th the wound was nearly united, and on the 6th the ligatures were removed. He was now ordered meat and quinine. On the 11th wine and porter were added, and on the 12th the decoction of bark, with aromatic confection, was substituted for the quina. On the 23d the wound was quite healed. The tumor, thought during the operation to be varicocele, was now still more clearly proved to be so. It disappeared on assuming the recumbent position at night; it was stationary during the exertions of the day.

Other circumstances have detained the patient in the hospital; but, as far as the operation is concerned, he may be considered cured, and we close the case accordingly.

Our readers can form their own conclusions from the foregoing cases. They appear to prove, that the danger of peritonitis after strangulated hernia is not so great as is commonly supposed, and they shew that the antiphlogistic treatment usually adopted after the operation is not so universally necessary as is imagined. Had the first patient possessed more stamina and fewer years, she would probably have recovered. As it was, she made an unexpected rally. In the second case it is not unlikely that the early stimulation promoted, if it did not cause, the secondary hæmorrhage, a very rare occurrence after hernia operations. If so, it should inspire some caution in the administration of early support.

# THE LONDON MEDICAL GAZETTE,

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SATURDAY, SEPTEMBER 18, 1830.

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## LECTURES ON SURGERY,

*Delivered at St. Bartholomew's Hospital,*

BY WILLIAM LAWRENCE, F.R.S.

### LECTURE LXXXII.

*Hernia; various kinds, and general description of—Trusses; their construction and application—Methods formerly adopted for the radical Cure of Hernia.*

A HERNIA is the protrusion of any viscus from the cavity in which it is naturally contained: thus herniæ may take place from the head, chest, or abdomen; but it is very unusual to meet with them in the two former situations. They occur there only in consequence of various injuries, which I have already considered. When we speak, therefore, of herniæ, without making any specification, we refer to the abdomen, and in this sense the term is equivalent to the common English word *rupture*. A hernia in this sense is the protrusion of any of the abdominal viscera through some opening in the cavity, constituting, in the great majority of instances, but not in all cases, an external tumor: the protrusion may be so small as not to become visible externally, especially in a fat subject. This is a specimen [handing round a preparation] where the protruded portion of intestine is only about the size of the end of the finger, and where it would not have constituted an external tumor if the subject had been tolerably fat. Some parts of the contents of the abdomen may be protruded through the diaphragm into the thorax, and there you would not have an external tumor: the formation of an external swelling, therefore, is not absolutely necessary to constitute a hernia. The parts which are protruded from the abdomen in the case of hernia, push before them the serous membrane which lines the cavity—the peritoneum: thus they receive an exter-

nal covering from the serous membrane: this covering is commonly called the hernial sac. The hernial sac, therefore, forms a small serous cavity, communicating directly with the greater cavity of the abdomen.—[Mr. Lawrence here illustrated the subject by preparations.]—This is a specimen of the cavity of a hernial sac: here is the opening by which the hernia communicates with the abdomen, and you see there is a continuity of the serous membrane lining the abdomen with the surface that forms the lining of the hernial sac.

The hernial sac, however, when we speak of it generally, consists of other parts besides this protrusion of the serous membrane or peritoneum; there are certain external coverings which differ in their nature and number in different herniæ, and which add to the thickness of the sac. In the hernial sac we distinguish the mouth—that is, the opening by which it communicates with the cavity of the abdomen, and which is generally of a rounded shape; the neck, which is the comparatively narrow portion included in that part of the parietes of the abdomen through which the hernia passes, which differs in its length and size in different cases; the body of the sac, which is the general expansion of it; and the fundus, which is the extremity opposite to the mouth;—such are the names which are technically given to the various parts of a hernial sac—the mouth, the neck, the body, and the fundus.

The contents of the hernia usually consist of the more moveable parts contained within the cavity of the abdomen—the omentum, the small intestine, the arch of the colon, the cæcum—these are the looser portions of the abdominal viscera, and which are usually protruded in the case of hernia. The more fixed parts of the abdominal viscera—that is, the ascending and descending colon, and that part of the urinary bladder which projects into the cavity of the abdomen, are occasionally found protruded in hernia; but this is of rare occurrence, these parts being so much more fixed in their situations in the



cavity of the abdomen, that they cannot be so easily protruded.

Particular herniæ are named either according to the situation which they occupy, or the parts which they contain, or by a compound epithet referring to both these circumstances; accordingly, if a rupture be situated in the groin, in the scrotum, under the crural arch, or at the navel, it is called *inguinal*, *scrotal*, *femoral* or *crural*, and *umbilical* hernia. The hernia which contains intestine is denominated *intestinal*; that which contains omentum, *omental* hernia. Now herniæ are very commonly described by names which terminate in *cele*—a Greek word, meaning in English, simply tumor: thus *bubonocoele* is inguinal hernia or tumor in the groin; *enterocoele* is a hernia of a portion of intestine; *epiplocele*, of a piece of omentum; *enterepipocele*, a rupture of both intestine and omentum; *omphalocoele*, an umbilical rupture; and if we wish to denote both the situation and contents of the rupture, we may compound those terms—thus an *enterobubonocoele* is a rupture situated at the groin, containing intestine; in this way, then, ruptures under different circumstances are denominated.

The peritoneum which lines the cavity of the abdomen adheres to different parts of the internal surface of the cavity, with different degrees of firmness. Along the anterior and middle part of the cavity, the peritoneum lies in close contact with the tendons of the abdominal muscles, and adheres so closely to them, that it hardly admits of being protruded so as to form a sac; but at the under, lateral, and posterior parts, the peritoneum is connected to the parietes of the abdomen by a very loose cellular tissue, which easily gives way to any force that acts upon it; so that the peritoneum may be displaced from its situation there to a considerable distance, and extend from its natural situation in the abdomen without any laceration of its parts. If you open the cavity of the abdomen, and press with your finger opposite to one of the natural outlets through which vessels escape from the cavity, you will be able to push before it a portion of the membrane; thus, if you press against it where it lines the aperture through which the spermatic cord passes, you will find that you can push a portion of it through the opening, over the spermatic cord; and in this way you make in the dead subject a kind of hernia—that is, a small hernial sac. In the same way it is formed in the living subject: under pressure applied to the contents of the abdomen, a certain portion of the surface of the peritoneum, where there is a natural aperture for the passage of blood-vessels or other parts, is pushed out by some part of the viscera. The continuance or repeated application of force to the part thus protruded, carries the protrusion to a greater extent; the hernial sac

becomes larger and larger, the peritoneum being dragged out of its natural situation, and its cellular adhesion giving way, allow it to be protruded; and in this way it may be extended in a very considerable degree: indeed, in the case of scrotal hernia, the tumor sometimes reaches to the knees of the patient, and yet the whole of it is lined with peritoneum, which originally was situated in the cavity of the abdomen, which has been displaced by the force continually acting upon it, and carried out of its natural situation to the extent I have mentioned. If hernia takes place quite suddenly—that is, if a person under any violent effort should have a portion of the peritoneum pushed through the parietes of the abdomen, we should find when we cut down to it, that the peritoneum would be unadherent to the parietes through which it was protruded; but this is only found immediately after the production of the hernia. Suppose, I say, a sudden force is applied, and a hernia takes place, if we examine the part attentively after it has occurred, we find that the sac is at first unconnected with the parts immediately around it, but as it is gradually extended, it becomes connected by cellular texture just as it was in its natural situation.

The protrusions which constitute herniæ take place generally at the apertures of the abdomen by which blood vessels pass out; thus you have inguinal hernia passing through the opening at which the spermatic cord in the male, and the round ligament in the female, pass out; femoral hernia at the exit of the femoral artery and vein, and umbilical hernia at the opening through which the umbilical vessels passed during the fetal state. Herniæ may take place, however, in situations even where there is no natural aperture, or at any place where the parietes of the abdomen have been wounded by any external injury.

The form and the size of a hernial tumor depend on the situation which it occupies, and the degree of resistance which the protruded parts meet with, when they escape from the cavity of the abdomen. Now, generally speaking, the mouth and the neck of the hernial sac are comparatively small, being limited to the size of the aperture in the parietes of the abdomen in which they lie; but when the rupture has passed through this opening, then the swelling expands itself, and assumes usually a globular or pyriform shape. If the protrusion take place where there is copious loose cellular tissue—where the integuments are loose—where no parts pass externally, so as to limit the growth—you may have the tumor acquiring a very considerable magnitude; thus, when the protrusion takes place into the scrotum, it may attain an enormous size; a scrotal hernia may become as large as the head—so large, as to consist nearly of the

whole of the loose viscera of the abdomen. Hernia of the labium pudendi of the female may also acquire a very large size, though not so large as that which passes into the scrotum of the male. In general the protrusion through the crural arch is comparatively small, the cellular tissue is tense, the fascia is here strong, and the projection can only extend in the direction of the bend of the thigh; hence a femoral hernia, if it be small, may be globular in its shape; but if it be large, it assumes a more pyriform appearance, the long axis passing parallel to the crural arch. But in each particular instance you will find the figure of a hernia different, according to the degree of resistance the tumor meets with after it has passed out of the abdomen, and the degree of density of the cellular texture of the part into which it is protruded.

The causes which produce ruptures are either such as increase the pressure which the contents of the abdomen receive from the action of the respiratory muscles, or such as diminish the resistance of the sides of the openings through which the protrusions occur. It sometimes happens that a hernia takes place quite suddenly—a person makes some very violent exertion, by which the muscles that surround the abdomen are put into forcible action, and under such circumstances he feels a crack, or a something give way, and he finds a tumor form in one of the situations of a natural aperture—the hernia having been immediately produced by the violent pressure on the contents of the abdomen. In these cases the nature of the cause is obvious: it is the excessive pressure—the pressure which the exertion produces on the viscera, forcing out some portion of them through one of its natural apertures. Generally, however, herniæ take place more gradually; they do not happen all of a sudden from any particular exertion, and yet the mode in which they occur is sufficiently obvious. A patient labours for some time under had stricture of the urethra; there is considerable difficulty in expelling the contents of the bladder; he is obliged to strain, in order to force out the urine—he expels it only in drops, and with great exertion. In such persons hernia very often takes place. Not uncommonly, in a person who labours for a long time under bad stricture, you will see a hernia on both sides of the body. In elderly persons, in whom the resistance of the abdominal parietes seems to be diminished—where they become, therefore, loose—where a certain portion of the fat that fills up the interstices is removed by absorption—we very frequently find that rupture takes place in a slow and insensible manner; some portion of the abdominal contents is protruded, without the patient's being very sensible of the occurrence.

When a protrusion has once taken place through the parietes of the abdomen, the tumor generally increases in size, in consequence of the continued action of the same cause that has given rise to it; and this increase, in certain situations, may go to a very great extent indeed. I have mentioned to you that scrotal hernia may descend as low as the knees; and there are instances in which the whole of the small intestines, the transverse arch of the colon, the cæcum, and part of the rectum, and even of the stomach, have been included in the protrusion—the parts gradually undergoing an alteration that you would hardly have supposed they possibly could have experienced. The stomach has sometimes formed a straight line from its cardiac to its pyloric orifice—a straight line from the opening in the diaphragm down to the hernia.

The sac of the hernia gradually increases in thickness, so that in most recent herniæ, those which have existed for the shortest time, you usually find it to be the thinnest, and that its thickness is generally in proportion to the duration of the hernia. But these changes are not produced by an alteration of the state of the serous lining. The portion which the peritoneum contributes to the hernial sac generally remains unchanged, it retains its natural thin texture, and the alteration in the density of the sac arises from the increased thickness of the external coverings which surround it. The peritoneal sac, however, experiences a remarkable change at its orifice; in that situation the serous membrane undergoes an unnatural degree of pressure from the parts through which it is protruded; it undergoes further pressure in general, from the truss which is usually worn in these cases; and thus, from these two circumstances, the peritoneal sac becomes thickened in its texture at the very neck of the hernia, and frequently acquires there an almost tendinous or cartilaginous hardness; it acquires so great a degree of hardness, that it is capable of producing stricture of the protruded parts, and bringing them into a strangulated state, while the rest of the membrane retains the natural thinness which distinguishes it in the abdomen. Now it may happen, that after the peritoneum has undergone the change I have just mentioned at the mouth of the sac, the continued increase of the hernial tumor may draw that portion of the membrane which is thus altered lower down, so that it no longer constitutes the mouth of the sac; a fresh portion then descends to form the mouth of the sac, and this portion may also undergo the same sort of change. Under such circumstances you may find, on opening the hernia, a contracted tendinous ring in the sac itself, situated below what would properly be called its mouth; and instances have been met with, in which there have

been two, or even more, of those contracted rings, fresh portions having been drawn down, after the mouth of the sac had undergone the change I have mentioned. I have seen an instance where a small contracted ring has appeared in a hernia, perhaps two or three inches below the part at which the protrusion has first taken place. The thickening, however, which the sac undergoes in old hernia, is, as I have already stated, generally produced by the gradual condensation of the surrounding membranes; thus you may sometimes have a hernial sac a quarter of an inch in thickness, though, when you come to dissect off the external parts, you find that the peritoneum itself retains its natural condition.

The contents of a hernia undergo a change as well as the sac itself. If they be allowed to remain in the protruded state, they increase in bulk; the size of the aperture prevents them from increasing just at the point where they passed out of the abdomen, but below that they may increase in size; fat is deposited, and the omentum, or portions of the mesentery or mesocolon, may descend and enlarge the tumor: thus you will find, if you take out the parts, that they are narrow, or constricted, just where they come out of the abdomen, and are expanded to a considerable magnitude below. Further, the parts that are protruded in hernia, if they continue out of the abdomen, are subject to external injury, by which inflammation may be excited; under such circumstances coagulable lymph is effused, and they become adherent to each other, or to the sac. Thus adhesions are formed, which mechanically prevent the return of the parts into the abdomen. Sometimes you have single threads of adhesions between the intestine and the sac; sometimes more extensive adhesions, connecting the parts together, so as to form one mass. Now here [exhibiting it] is a large hernia where the parts are really consolidated together; they are so adherent that you can hardly recognize the protruded viscera—and they are also adherent to the sac. You will observe the intestine here as it passes out of the abdomen closely adherent to the neck of the sac.

Herniæ are found in very different states in different instances; hence they are distinguished as being reducible, irreducible, strangulated, or incarcerated.

A reducible hernia is one in which the parts are unadherent to the sac, and where they pass freely into the abdomen. In the case of a reducible hernia, you have a tumor in one of the ordinary situations of rupture; this tumor disappears when you apply pressure to it externally, or when the patient lies down; it returns again when the pressure is taken off, or when the patient assumes the erect position. The tumor gene-

rally increases in size, and becomes more tense, when the patient holds his breath, or coughs; and in the latter case an impulse is felt in it;—the quantity of its contents is thus increased, and we feel, when we put the hand on the tumor, that a sensation is communicated to it as if fresh parts came out of the abdomen. When you meet with a tumor in one of the ordinary situations of hernia, characterized as I have just stated, you have little difficulty in determining that it is a rupture; indeed the characters I have mentioned do not belong to any other kind of swelling. When the tumor first takes place, the patient generally experiences pain in the situation of the swelling—more or less uneasiness; he has a sense of weakness in the situation of the tumor, and frequently various uneasy sensations are produced in the abdomen generally, in consequence of the protrusion of a part of its contents; colicky pains in the bowels—and these, of course, are aggravated by any irregularities in diet, or in the performance of the functions of the alimentary canal. A state of pain and uneasiness, however, is by no means an essential character of reducible hernia, for sometimes it may be formed without any uneasiness, and may exist for years without giving the patient pain or trouble of any kind whatever. In the case of an intestinal hernia, the impulse, perhaps, on coughing, is more considerable than in the case of an omental hernia; and on pressing of the tumor, and forcing up its contents into the abdomen, a peculiar sensation is communicated to the hand, and a gurgling noise may be heard. In an omental hernia you have not this sensation produced; the swelling has a soft doughy feel, and when you press it up the contents do not go in so readily as those of an intestinal hernia, which escapes almost immediately into the abdomen.

A reducible hernia—that is, a rupture in which the parts come down and pass up again into the abdomen with ease—is not attended with any imminent danger to the patient. The portion of the protruded viscus, if it be a part of the alimentary canal, is capable of executing its functions (supposing the rupture to be of a moderate size) just as well as if it were in its proper situation; and indeed we find, even in the case of very large ruptures, that the functions of the alimentary canal are often exercised without any apparent interruption. But then you cannot, at any time, reckon on the tumor remaining constantly in this quiet and innocuous state. If the individual makes any bodily exertion, a fresh portion of intestine may be forced out through the aperture, and the parts may not then admit of being returned: the hernia may thus pass from the reducible into the irreducible or incarcerated



state, and bring the patient, in a few hours, into a very dangerous situation. A reducible hernia, therefore, though it may remain for years in one state, must always be regarded with apprehension; and it is necessary that the patient should take proper means to prevent an increase of the tumor, and to obviate the danger attendant on it. Moreover, proper treatment is necessary in the commencement of a reducible hernia, in order to prevent its increase. The mere bulk of the hernia is a source of inconvenience, independently of any other circumstance, and if no measures be taken to keep it within bounds, the natural tendency of the tumor is to increase in size, and, in some situations of the body, this takes place to an almost unlimited extent.

The proper course, then, to pursue in a case of reducible hernia, is to apply a truss; an instrument by which pressure is constantly kept up on the opening, by which the contents of the hernia are prevented from passing out of the abdomen again, and by which the patient is preserved from the risk of its becoming strangulated. The operation of a truss is confined to the object I have mentioned—viz. that of keeping up a constant pressure on the mouth of the sac, and preventing its contents from coming out of the cavity of the abdomen again. The hernia is first replaced, or returned, into the abdomen; then the truss is put on and adjusted, and as long as it remains in its situation, if it be well made and of sufficient strength, no protrusion can take place. Now the essential part of a truss consists in a flat portion of steel, sufficiently bent and very elastic, which is called the spring of the truss.—[Mr. Lawrence here exhibited the instrument.] When the ends of this are separated, so as to admit of being placed on the body, it applies itself, by its own elastic power, close to the surface, and keeps up a constant pressure upon the part to which its extremity is applied. This portion of steel, as I now shew you, is fastened at its anterior end to another portion, which is the basis for that part of the truss which is called the pad, and which serves to press upon the mouth of the sac. The effect is the same as if the steel belt which belongs to the pad and the spring were one piece; though they are, in fact, made of two pieces, but closely riveted together. Then the pad of the truss is formed into a convex shape, by a portion of cork and certain soft substances covered with leather; the spring itself is also covered with leather, and to the opposite end of it a strap is bound, which fastens to small studs, or brass knobs, on the pad. This is the simple formation of an ordinary truss. This is the spring which I now shew you, before it is covered, and this is the part for the pad which fits over the opening through which the hernial contents are protruded,

and by means of the strap which fastens to one of those brass nobles on the pad, you can regulate the degree of pressure to be made.

Now you will observe, when this instrument is put on the body, the pressure which is exerted by the steel spring keeps the pad of the truss constantly applied on the mouth of the sac; if, therefore, a truss of this kind be well made, and will fit properly to the individual, you have only to apply it as I have mentioned, and the various movements of the body do not at all derange it, or disturb its position; its elasticity enables it to give way at the spring, the pressure always remaining the same on the mouth of the sac, and thus the parts are constantly kept in their situation, and prevented from again descending. Now as the pad of the truss forms a convex surface, some difficulty is occasionally experienced in adjusting it so exactly to the part on which it is to be placed. Sometimes the instrument has a disposition to rise upwards, and this may happen in consequence of the motions of the lower extremity, or the side to which it is applied. In order to remedy this, the truss is very often made with a thigh-strap—that is, another strap which goes under the thigh, fastens to the truss behind, and prevents it from rising up, on the movements of the lower extremity.

The difficulty which is occasionally experienced in keeping trusses exactly fitted to the body, and preventing the parts from being protruded, without exerting an injurious degree of pressure in any situation, has led persons to try various modifications of the form of this simple truss; to try different contrivances which are supposed to remedy this or that inconvenience; and thus you have a great variety of trusses; in each case, the deviser of the new form fancying he can accomplish something that has never been effected before. Generally speaking, I think you will find it best to employ trusses of the most simple formation; they are found to answer the purpose most effectually; or when this is not the case, it will generally arise from the truss not being well fitted to the individual who wears it.

There is one truss which has been used very extensively, and which is very much approved of by patients, which consists simply of the part that surrounds the body, without any strap whatever to fasten it. It consists simply of the steel part, with a pad that presses on the rupture, and with a corresponding pad to fit upon the back. This is the patent truss of Messrs. Salmon and Ody, of the Strand. This pad corresponds [shewing the truss] to the back of the pelvis, and the other corresponds to the situation of the hernia; there is no strap to be fastened any where. A greater degree of motion is allowed in this truss than

in any other, as both the pads work on pivots. People find this to answer extremely well, and nothing can be more simple or more easy than its application. The spring of this truss is made with several portions of steel, each of which admits of being removed, so that the degree of pressure can be increased or diminished at the will of the individual. The spring, which is within this covering, as I have said, consists of several different pieces, one or more of which can be taken off and added again, should it be found necessary.

There are a great variety of other modifications of truss, but I do not enter into the description of them, because I conceive that those simple trusses will answer the purpose better than any of more complicated construction.

Now, the effect of the truss, you will understand, is simply that of keeping the parts that have been protruded within the cavity of the abdomen—of preventing them from passing out again after they have been reduced—and therefore of liberating the patient from the dangers and inconveniences produced by the existence of a rupture and its continued increase. The application of a truss is not what is called a radical cure of the disease—it is merely a palliative measure calculated to lessen the inconvenience which the patient experiences. When you return a rupture by pressure of the hand, or when the rupture goes up of itself on the patient's lying down, the hernial sac is not replaced—it is confined by cellular membrane to the parts among which it has been pushed; it remains, therefore, out of the cavity of the abdomen, ready for a fresh protrusion when the pressure of the truss is removed. You may have a rupture kept up for a number of years, and if you take off the truss, and the patient makes exertion, the parts may be forced out again, because the hernial sac remains ready to receive them. The application of a truss is merely to relieve the patient from the danger of incarceration, and the inconvenience which the unlimited increase of the tumor would produce; yet, if that truss be worn constantly, it very frequently produces a radical cure;—if you keep the parts constantly within the abdomen, the mouth of the sac will contract. We find in the body generally, that when any hollow part is kept empty there is a tendency in it to contract—to diminish; and as the mouth of the sac retains certain dimensions so long as it is distended by protruded parts, so when those are removed it will contract, its sides will come together, and the orifice will become so small after a certain time, that the parts will not again find their way through it. Thus, by wearing a truss, a radical cure may ultimately be accomplished. This will be more likely to take place in young

subjects, where the healing powers are more considerable; and in order that there may be a chance of a radical cure, the truss should be worn steadily, for if you allow the pressure to be constantly applied to the mouth of the sac, and take care that it is constantly kept empty, the cure commences from that time. Under circumstances where the truss has been worn for a considerable time, we sometimes find that the mouth and neck of the sac are thrown into actual folds, which become adherent; coagulating lymph is thrown out between them, and thus the orifice of the sac is mechanically sealed up. This [showing it] is a specimen of that kind, where there is a hernial sac, but where you cannot see any direct opening into it; the mouth is almost obliterated. Here is another specimen of a hernial sac in the same state, where I believe the orifice is wholly closed, and there is no communication whatever between it and the cavity of the abdomen.

I have mentioned to you that the truss must be worn constantly, in order to give you the chance of accomplishing a radical cure by its application. When I say constantly, you will not understand that it is necessary to wear the truss during the night. In the recumbent position of the body, there is no disposition to protrusion in a reducible hernia; the parts go up of themselves when the patient lies down, and do not come down again until he gets up; he may therefore put off his truss after he has laid down in bed at night, and put it on again before he rises in the morning. A well-fitted truss so completely secures the patient from all the risks attendant on the complaint, that he may take his ordinary exercise—he may use active exertions like another person. I have known gentlemen who lived a country life, who rode and hunted, and, in fact, participated in all the incidental circumstances attending a life of that kind with perfect impunity, while wearing a well-adjusted truss. It is expedient, however, particularly when a person just commences to wear it, that he should abstain from any violent exertion; it is also very necessary that he should pay attention to the state of the alimentary canal, and keep the bowels rather open than otherwise. You can easily understand that if the bowels become costive, there will be a greater probability of the reappearance of the hernial protrusion.

I cannot mention to you exactly the length of time necessary to wear a truss, in order to gain a chance of a radical cure. In each particular instance, you must feel in the situation of the rupture whether any protrusion takes place or not when the patient coughs, or holds his breath. At all events you will hardly expect, even in a favourable case, that a radical cure will take

place by wearing a truss, in less than three, four, or five years.

Now you will hardly be surprised if it occasionally happens that a protrusion takes place while the patient is wearing the truss, which places him in a state of considerable danger; for although a person wears a truss, a force may push down a portion of the bowel below the side of the pad, and thus strangulation may take place; and I should observe, that if the neck of the sac has become contracted by the pressure of a truss, and a protrusion then takes place, it is very likely to become strangulated, because the orifice is so much more contracted than it was before. Hence persons have sought for some means of radically curing rupture, and heretofore various means were adopted for that purpose, which are now become obsolete. The older surgeons, with a view of radically curing rupture, dissected down to the swelling, isolated the hernial sac, and tied a ligature round its outside near to the orifice at which the parts were protruded from the abdomen; or they cut into the parts, returned the protrusion, and then sewed the sac up with sutures; and some who went a shorter way to work, performed the operation of castration—cut away the spermatic cord, testicle, tumor and all! Such are the means which have been employed for radically curing ruptures. Now you will easily understand, that all those proceedings must involve a risk equal to that of a strangulated hernia. If any of those measures were adopted, they would put the life of the patient in as much danger as the operation for strangulated hernia could do; and this is only performed to save the patient's life; it is not done with the view of radically curing the complaint, for it does not secure to the patient a radical cure—he must wear a truss afterwards. You will easily see, therefore, why all measures of that kind have been abandoned. Instances have been known in which patients have submitted to have a truss that pressed very powerfully upon the sac so as to bring on a state of inflammation there, and it is possible that inflammation thus produced might cause agglutination of the sac, and prevent the reproduction of the tumor. But this is also a very uncertain and dangerous mode of proceeding, for if you were once to excite inflammation in a part of the peritoneum, you can have no security for limiting it just to the point to which you wished it to extend; it might spread over the whole cavity of the abdomen, and the patient might lose his life by such an attempt to rid him of the hernia. It is, therefore, now considered that a patient who has a reducible hernia must be contented with the palliative relief which the application of a truss will afford.

## EXPERIMENTAL AND CLINICAL RESEARCHES

ON THE

### PHYSIOLOGY OF THE HEART'S ACTION.

By J. HOPE, ESQ. M.D.

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[Continued from p. 789\*.]

WE proceed to a brief consideration of the mechanism by which, according to the foregoing experiments†, the motions and sounds of the heart appear to be accomplished.

#### *Of the Motions.*

We have already expressed our dissent from the theory of Laennec and Hunter—that the injection of the aorta is the cause of the heart's impulse.

The objection to this view resides in a simple fact—that when the heart of an animal, as a frog, rabbit, dog, &c. is detached from the body, and placed upon a table, it continues to act, and each contraction elevates the apex. Hence it is undeniable that the muscular fibres have an inherent faculty of producing this action. The manner in which the action is accomplished is very visible on inspection. During the state of relaxation, the heart lies collapsed and flattened, with a large extent of its under surface applied to the table; on contracting it starts up, and assuming a more rounded form, is sustained by a comparatively small point of contact. The apex is, consequently, elevated, and as the superior weight of the base renders it the more fixed point, the elevation of the apex is proportionally greater.

The action appears to be closely analogous in the living subject; but before describing it, we must advert for a moment to the anatomy of the heart.

In large animals, as the human species, the auricles, especially the left, are attached to the posterior part of the base; while the aorta and pulmonary artery spring from its anterior

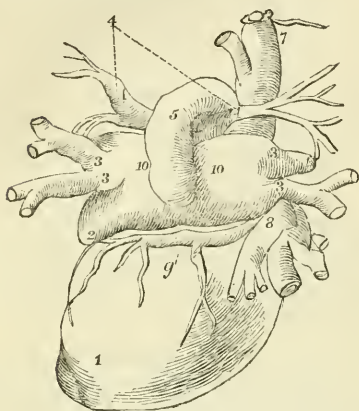
\* Where the last conclusion was accidentally omitted, v. z. :

10. The *second sound* is occasioned by the diastole of the ventricles.

† See Gazette, No. 142, page 786.



part. This will be rendered more apparent by a diagram\*.



1, The left ventricle, viewed posteriorly.

{ 2, Left auricle.

{ 10, Sinus of the left auricle.

3, The four pulmonary veins.

5, Aorta.

7, Descending cava.

8, Ascending cava.

9, Great coronary vein.

The aorta and pulmonary artery are the fixed point towards which the fibres of the heart contract during the ventricular systole: and the only mode in which we believe that the injection of the aorta can be subservient to the impulse, is by giving greater stability to this point, d'appui.

As the sinuses of the auricles, according to our experiments, are constantly full of blood, even during the contraction of the auriculæ; and as the regurgitation of that blood in the veins is opposed by the pressure of the superincumbent parts, and of the atmosphere on the surface, with a power greater than the weight of the ventricles, the auricles form an almost unyielding fulcrum for their action.

Such being the anatomical and physiological state of the parts, what occurs during a *ventricular systole*? The braced fibres, contracting towards the aorta and pulmonary artery in front, draw the tense and rounded body of the ventricles upon the auricular sinuses be-

hind, these being, at the same moment, in the state of increasing distention. Consequently, the apex of the ventricles is tilted up; and this motion is performed with considerable velocity, because, if we may be allowed the illustration, the apex is the long arm of the lever, the auricles being the fulcrum and the moving power at the aorta and pulmonary artery.

Another circumstance, probably, contributes to the elevation of the apex; namely, the retropulsion of the auricular valves: for as these act on a column of fluid, which offers a resistance greater than the weight of the heart, the action is reflected on the organ itself, and drives it forward.

It is unnecessary to repeat,\* that as the ventricles contract to their minimum, the apex is thrown more and more forward by the auricular distention, advancing in the same progression to its maximum.

At this moment the *ventricular diastole* takes place. The consequence is manifest. The muscular fibres being relaxed, the organ collapses; and sinking with its whole weight upon the distended auricles, while the ventricles are expanding by their *elasticity*†, the auricular blood shoots rapidly in, and restores the cavities to a medium degree of fulness.

Next succeeds the interval of repose, during which both the auricles and ventricles remain quiescent, in an equal state of moderate distention. This interval is so short in animals with a circulation of 70 per minute, as to be nominal rather than real; for, admitting that the repose of the ventricle occupies one-fourth of a whole beat, or the  $\frac{1}{280}$ th part of a minute, half, or nearly, of this period will be occupied by the auricular systole; so that the time during which both auricles and ventricles are tranquil can scarcely be estimated at more than the  $\frac{1}{360}$ th of a minute.

The auricular systole follows and interrupts the repose; and as the ventricles during that state are partly full, the additional quantity of blood impelled into them must be inconsiderable. Accordingly, in our experiments

\* Vide Experiment, Gaz. July 31, 1830, page 685.

† We mean the power, whatever it be, by which a contracted muscle returns to its natural state.

on the ass, we found the auricular contraction to be very slight, and only of momentary duration.

### *Of the Sounds.*

Laennec did not offer any explanation of the mode in which the sounds of the heart are generated: he merely referred them to the muscular contraction.

All the phenomena, however, of the heart's action, both in health and disease, lead us clearly to believe that the sounds are occasioned solely by the motions of the contained fluid.

When the ventricles contract, an impulse is given to the particles of fluid in contact with them; and this being propagated by collision from particle to particle, generates sound. The irregularity of the interior surface, occasioned by the columnæ carneæ, is eminently calculated to favour this formation of sound; for on the very first contractile movement, the stratum of fluid nearest the surface, and involved in the sinuities of the columnæ carneæ, is thrown into an infinity of contrary currents; whence the collision of particles is not only more extensive, but more violent than if it were occasioned by a simple, direct impulse alone. It is obvious, that if the contraction be gradual, the sound will be subdued and prolonged; and that if it be sudden, the sound will be proportionally short, loud, and clear.

While this is going on at the surface, the central mass of fluid is tending towards the aortic and pulmonary apertures; and as its current is compounded of a multitude of conflicting streams, reflected on every side from the ventricular parietes, the collision thus occasioned amongst the particles of blood produces sound, in the same manner as when a fluid is transmitted through a tube of unequal calibre. To this cause, rather than to the passage of the blood through the aortic and pulmonary apertures, we ascribe the prolongation of the ventricular sound; for those apertures are smooth and infundibuliform, two circumstances known to be most favourable to the tranquil and silent transmission of fluids. We believe, therefore, that sound is not generated in those situations, unless there be some preternatural obstruction to break the uniformity of the current.

The *second sound*, or that produced by the ventricular diastole, is attributa-

ble to a more simple and constant cause; it is, accordingly, more uniform in its character. When the diastole takes place, the blood shoots in from the auricle, favoured by a number of concurrent circumstances: these are, the width of the auriculo-ventricular aperture, the expansive elasticity of the ventricular parietes, the weight of the ventricles collapsing on the auricles; lastly, the extreme distention of the auricles, which disposes them readily to evacuate their contents. The blood, consequently, enters with instantaneous velocity, and the reaction of the ventricular parietes on its particles, when their course is abruptly arrested by the completion of the diastole, is to be regarded as the cause of the loud, brief, and clear sound.

It is our belief that the auricular contraction does not produce any sound whatever.

This opinion is founded, 1st. on the facts, that as the ventricle is already partly full, the auricle can inject little additional blood; that the auricular contraction was seen in the ass to be very inconsiderable; that the auricular orifice being wide, the blood can meet with no obstruction which could occasion sound. 2d. On pathological evidence—namely, when the ventricle is dilated, its sound becomes short, loud, and clear; and as the disease of the ventricle, and the change of the sound, invariably occur in concomitance with each other, and in strict relations of degree, they must unavoidably be regarded as cause and effect. Now, if the auricle created any sound, it would be heard anterior to that of the ventricle—it would precede the shock against the side, and it would not, in all probability, follow in its character the modifications of the ventricular sound with such accuracy as on all occasions to be undistinguishably amalgamated with it.

We now proceed to apply our views to the pathology of the heart, and we shall make their applicability more apparent by contrasting them with the theory which we controvert\*.

Dilatation of the ventricles, hypertrophy of their parietes, the combination of these two affections, denominated

\* We learn, from a notice in the *Med. Gaz.* Aug. 7, 1830, page 773, that M. Ogieraux has espoused views similar to those of Dr. C. Our observations, therefore, apply to both, so far as we can judge of M. O.'s from the notice quoted.

hypertrophy and dilatation, and disease of the valves, constitute the most common forms of disease of the heart.

**DILATATION.**—The diagnostic sign of dilatation, according to Laennec, is a loud, short, and clear sound, like that of the auricles\*.

“With Laennec, on this point,” says Dr. C. “every observer of heart disease agrees. On our view of the heart’s action, the sign is easily explained. This sound, we have said, is produced by the rushing of blood into the ventricles; it will therefore be loud in proportion to the size of the receiving cavity. How are we to account for the loudness of the sound [on Laennec’s explanation? The sound, he says, is caused by the action of the ventricles; but were it so, it ought to be less in proportion as the ventricle is weak, yet the very opposite is the fact.”

A single argument, which Dr. C. has overlooked, is subversive of his principle—viz. when the parietes are extenuated the sound is loud, though the cavities be not dilated. This occurs, for instance, when the parietes of the heart are naturally thin. Moreover, if the loudness of the sound depended on an increased rush of blood, it should be *longer* as well as louder; but in passive dilatation it is short—peculiarly short! The only possible way in which this shortness can be reconciled with Dr. C’s theory, is by supposing that the blood enters, not only in greater quantity, but with increased velocity; but in this case another difficulty presents itself—the impulse would be increased; whereas it is deficient—there is often none.

Dr. C. states that the deficiency of impulse in dilatation can be explained on either view—“on Laennec’s, by supposing the impulse to be in proportion to the strength of the ventricle; on his own, by the rush of blood, which causes the impulse, being lost in a larger cavity, over a larger surface.” But it must be equally lost in dilatation with hypertrophy; in which, when the thickening is extreme, every one knows that the impulse is stronger and more extensive than in any other affection whatever. Besides, when the parietes are extenuated without dilatation of the cavity, the impulse is diminished,—which proves that the diminution is

dependent, not on the rush of blood being lost in a larger cavity, but on the feebleness of the parietes.

In every point of view, therefore, the theory in question is palpably incapable of accounting for the signs of dilatation.

The principles of Laennec, on the contrary, explain them with beautiful precision, and in exact accordance with the laws of motion and sound. Thus—

The impulse in dilatation, when perceptible at all, is a sudden, brief blow, which communicates a shock or vibration to the thoracic parietes, but has not power or duration to elevate them. This is exactly what we should expect. For as a thin muscle has greater facility and rapidity of motion, though less power, than a thick one, the extenuated ventricle contracts on its contents with greater velocity than natural, but its action is feebler, and its power sooner exhausted. Accordingly, the apex is suddenly tilted forward, but as suddenly collapses; and the pulse is soft, weak, and frequently small.

The sound is loud, brief, and clear, because the impulse communicated to the blood is smart, though feeble; and such an impulse, by causing rapid, but fine vibrations, is known to produce a sound of that description, whether liquids or air be the conducting medium. Thus, to use a familiar illustration, instead of referring to abstract physical laws,—let the reader lock the palm of one hand transversely upon that of the other, by placing the thumb of the left hand between the first and second fingers of the right. By then suddenly closing the palms, he may, with a little management, include a portion of air, and thus produce a flapping sound. If the motion be performed smartly, though with little muscular power, the sound will be loud and clear: if it be performed slowly, whatever be the degree of muscular power exerted, the sound will be subdued, and on a lower key.

It may be asked why the sound in dilatation is not prolonged by the current of fluid through the ventricle? Simply because the current is too languid to occasion sound. This languor is proved by the feebleness of the pulse.

**SIMPLE HYPERTROPHY.**—We shall give Laennec’s description of this disease verbatim, because it cannot be improved. “The impulsion,” says he,



"is ordinarily sufficiently strong to heave the head of the observer in a very sensible manner, and sometimes it is so strong as to produce a shock disagreeable to the ear. The greater the hypertrophy, the more time that heaving takes for its performance. When the disease is carried to a high degree, one evidently perceives that it takes place with a gradual progression; it seems as if the heart swells, and applies itself to the walls of the chest, at first by a single point, then by its whole surface, and that it next sinks back (*s'affaisse*) all on a sudden\*."

"In moderate hypertrophy the contraction of the ventricles produces only a stifled sound analogous to the murmur of inspiration, and the clack (*claquement*) of the auricle is much less sonorous than in the natural state. In hypertrophy carried to an extreme degree, the contraction of the ventricles produces nothing but a shock without sound, and the sound of the auricle, become extremely dull, is scarcely audible†."

Dr. C. contends, that "on Laennec's principles, the sound should be loud, for the thicker the ventricular parietes, the louder should be the sound produced by their action:" whereas on his own, "it is," says he, "as it should, *à priori*, be expected. The thick fleshy walls will only transmit *un son étouffé*—"a smothered sound." Now it happens that dense media are better conductors of sound generated in them than rare. A consolidated lung transmits pectoriloquy, bronchophony, &c. much more distinctly and to a greater distance than the natural spongy tissue. Consequently the deficiency of sound in hypertrophy does not depend on imperfect transmission. Dr. C. is sensible of this difficulty, and attempts to evade it by saying, that muscular fibre is a worse conductor than other solids. We do not think so, and Dr. C., in the next page, unconsciously admits it: for, speaking of hypertrophy with dilatation, in which the sound has to be transmitted through the same "thick, fleshy walls," he says—"The loudness of the sound is in accordance with our opinions," &c. It is, further, incompatible with his theory to ascribe the deficiency of sound in simple hypertrophy to diminished velocity or quantity of the blood

injected by the auricle; for this would cause diminished impulse against the ribs,—the rush of blood from the auricle being, according to Dr. C. the cause of the impulse. But the impulse in hypertrophy is increased. The diminished sound, therefore, is utterly inexplicable on this theory. The increased impulse is equally so. For if, as Dr. C. maintains, "the beat of the heart is produced by its swelling and coming against the ribs, in consequence of the impulse given by the rush of blood from the auricle," that swelling ought to be less than natural, when, to use Dr. C.'s own words, "the increased growth of the sides of the ventricle proceeds to diminish the cavity much;" and the auricular impulse ought, likewise, to be less, because it is burdened with the increased weight of the hypertrophous ventricles, and the increased resistance which their thickened walls offer to distention. On this theory, therefore, the impulse in simple hypertrophy ought to be less instead of greater than natural.

The principles of Laennec explain the signs with perfect simplicity. The impulse is increased in the direct ratio of the hypertrophy; the sound is diminished, because, as the hypertrophous ventricle contracts slowly and with a gradual progression, the impulse communicated to the contained fluid is not sufficiently smart to occasion more than a dull, stifled sound, if any at all.

**HYPERTROPHY AND DILATATION.**—"The signs of this affection," says Laennec, "are a compound of those of hypertrophy and those of dilatation. The contractions of the ventricles give at once a strong impulse and a well-marked sound. That of the auricles is loud\*."

"If," says Dr. C. "we admit these signs to be correctly stated, there will be in one of them an objection to our explanation of the heart's action. The loudness of sound is in accordance with, and in support of our opinions, depending, as we assert, on the size of the cavity into which the blood rushes. But the strong impulse, if it were invariably present, would be an objection to our view, for unless the auricle were at the same time hypertrophied, our explanation would not account for it."

An objection, indeed! in our opinion insuperable, and subversive at once of the whole theory; but Dr. C. clears it

\* *Traité de l'Auscult.* Edit. ii. tom ii. p. 395.

† *Ibid*, p. 400.

\* *Traité de l'Auscult.* Edit. ii. tom. ii. p. 514.

with perfect ease in an unexpected manner—by simply denying the fact, that hypertrophy of the ventricles occasions increased impulse!

We do not comment on this opinion, as we presume that when its author has—what, according to his acknowledgment, he has not yet—“a sufficient number of cases of heart disease accurately noted\*,” he will change it. He does not, however, go so far as to deny that there is no such thing as increased impulse; and as it must have a cause, he says, “our opinion is, that when increased impulse occurs with hypertrophied ventricle, it is incidental. We assert, moreover, that the contraction of the auricle is the active force in producing the impulse.” This is amazing—that the feeblest portion of the heart should be the sole spring of all its most violent actions!

The opinion imports, that every case of ventricular hypertrophy with increased impulse, is attended with hypertrophy of the auricle. But the experience of Laennec, Bertin, and all authors who have ever written on diseases of the heart, are adverse to this. They are unanimous in maintaining, that diseases of the auricle are comparatively rare, and that its hypertrophy is not a necessary concomitant of that of the ventricle, when the latter is attended with increased impulse. On glancing at a table of 26 cases, minuted by ourselves in the year 1828-9, we find only four or five in which the auricles were enlarged, and three of these were cases of passive dilatation of the ventricles with *diminished* impulse. In one only was the impulse increased, and in that the ventricles were enlarged without being extenuated, and were capable of producing the impulse.

To the overwhelming aggregate of evidence on this subject, Dr. C. opposes nothing more than his opinion that pathologists have overlooked the hypertrophy of the auricle.

The plain inference amounts to this,—that the theory under consideration is so glaringly insufficient to account for the signs of hypertrophy and dilatation, that even the author does not attempt the application.

On the principles of Laennec all is plain and simple.

The pulsations are “brusques, secs,

violens, qui repoussent fortement la main\*.” That is, they partake of the smartness of dilatation, and the power of hypertrophy. The accompanying sound is audible to a great distance†. It is, in fact, the loud, abrupt sound of dilatation, blended with the murmur resulting from the powerful propulsion of the blood by hypertrophy.

It may here be remarked, that it is known to all practical auscultators, beginning with Laennec, that the impulse and sounds of every affection of the heart may partially, and even totally fail, when the vital powers are enfeebled or exhausted by any cause whatever; or when the heart, either from its own debility, or an obstacle in front, is gorged with an accumulation of blood, which exceeds its propulsive power. Ignorance of this fact has sometimes led the inexperienced erroneously to consider these cases of exception as proofs that hypertrophy does not occasion increased impulse.

We have reserved the second sound and impulse, or *back stroke*, till the present moment, because they may be more conveniently noticed, in reference to the three forms of disease conjointly.

Independent of the fact, established by our experiments, that the ventricular parietes do not come in collision by their systole, and, consequently, do not, as Dr. C. imagines, occasion the second sound, we are inevitably led to the same conclusion *à priori*. For it were extravagant to suppose that a ventricle, dilated and extenuated to the extreme, could instantaneously expel its contents, and bring its sides in smart collision. Yet the second sound, under those circumstances of dilatation and extenuation, is as loud, and sometimes louder than ever.

In hypertrophy, the ventricle contracts slowly and gradually. The result, therefore, might be contact, but it could not be collision, of the internal surfaces. Consequently, no sound whatever could be produced in simple hypertrophy.

In hypertrophy and dilatation, collision is conceivable; but rupture of the heart, the aorta, or the lungs, is infinitely more so, and the pulse would possess a hardness and force which are unknown.

On our view, that the influx of blood during the ventricular diastole is the cause

\* Paper by Dr. C. p. 195.

\* Laennec, tom. ii. p. 515.

† Ibid. p. 514.

of the second sound, it admits of the readiest explanation under every possible circumstance. Thus, in the healthy state of the organ, the sound is loud, brief, and clear, because the blood, shooting in through a wide aperture, is abruptly checked when the diastole is completed. In dilatation it is louder, because the quantity of blood entering is greater, and, from the thinness of the walls, the check is more sudden. In hypertrophy the sound is weak and dull, because the unyielding thickness of the parietes renders their expansion by the fluid more difficult and gradual; consequently, the re-action, generating the sound, is more languid. When the hypertrophy is extreme, and the cavity contracted, the sound becomes extinct, not only from the operation of the same causes in a greater degree, but also from the diminished influx of blood.

In hypertrophy and dilatation the sound is louder than natural, because an augmented quantity of blood enters, with its momentum increased by the preternatural weight of the enlarged heart. It is in this affection, particularly when advanced to a high degree, that the *back-stroke* is most felt. Its cause is so obvious that it requires no further explanation.

When the impulse and first sound become extinct from failure of the vital powers, or from engorgement of the heart, occasioned, for example, by a paroxysm of asthma, &c. the second sound, likewise, becomes inaudible. The cause is manifest: the diastole is imperfect in the same degree as the systole.

When the auricular valves are contracted, the second sound is accompanied with bruissement—the sawing, filing, whizzing, or bellows-sound—dependent on the jar of the fluid, expanding after its escape from the contracted aperture.

*Valvular Disease.*—We have now to examine what evidence this affection yields, that the ventricular contraction is the cause of the impulse.

Laennec says, “the bruit de soufflet, or bellows sound, attends the systole of the left auricle, when the mitral valve is diseased, and that of the ventricle, when the induration occupies the sinoids of the aorta \*.”

For systole of the auricle substi-

tute diastole of the ventricle (which is virtually the same, so far as the cause of the bruissement is concerned), and he has stated what is rigidly true; but he has not stated the whole truth, and this leads us to notice one of the extremely few oversights committed by this wonderfully accurate observer. He did not discover that bruit de soufflet attends the systole of the *ventricles* when the auricular valves are contracted. It occurred to us to notice this fact many years ago; and though we are not aware that it has been remarked by any writer, we think that it must be known to most experienced auscultators.

The following case, which came under our notice June 16th, 1825, in the Royal Infirmary of Edinburgh, we select as being well marked.

Christian Anderson, æt. 42. Pulse imperceptible. *Impulse* was an irregular succussion or undulation of the chest. First *sound* was a very loud bruit de lime, or that of sawing, obscured and subdued. It commenced abruptly, with a flap. The flap of the auricle (*i. e.* of the ventricular diastole), short and flat, was scarcely audible at the conclusion of the ventricular sound. Same sounds on both sides of the heart, but more subdued and indistinct on the left.

*Diagnosis.*—Dilatation of the heart, particularly on right side. Parietes flaccid, not thickened.

*Section.*—*Right auricle and ventricle* much dilated: the latter larger than an orange. Parietes of both of natural thickness, but ventricular columnæ carneæ enlarged. Muscular substance firm, but pale.

*Left Ventricle.*—Cavity enlarged to size of a goose's egg. Walls of natural thickness, but pale, flaccid, and easily lacerable. *Auricle* slightly thickened and dilated.

*Tricuspid valve* was an uneven cartilaginous ring, which admitted the middle finger. *Mitral valve* was an irregular cartilaginous ring, which admitted the end of the little finger.

*Pulmonic and aortic valves* were natural, except that the corpora sesamoidæ of the latter were enlarged.

To this case are annexed the following remarks:—“As the pulmonic and aortic valves were equal to the discharge of their function, the sound proceeded from regurgitation through the auricular valves. Hence if bruissement be heard during the ventricular contrac-

\* *Traité de l'Auscult.* Edit. ii. tom. ii. p. 579.



tion, we are not necessarily to infer that there is disease of the aortic or pulmonic, rather than of the auricular valves\*."

The second sound was scarcely audible; which proves that the ventricular diastole was not sufficiently strong, or extensive, to occasion it, and much more to occasion bruissement. This sign, indeed, is always more easily excited by a current *into*, than *out of*, the auricle; because in the latter direction the avenue to the aperture is infundibuliform.

The number of other cases with which we are prepared, if it were necessary to substantiate our assertion that bruissement attends the ventricular sound when the auricular valves are contracted, leads us to assume the fact as certain. We may add, that this lesion communicates bruissement to the first sound, when it is not sufficiently advanced to impart it to the second. The reason is simple and obvious. A slight degree of disease will suffice to prevent the valve from closing accurately, and it will thus leave a small aperture through which the blood will be violently retro-pelled by the ventricular systole. Whereas a considerable degree of disease is necessary to contract the orifice to the blood passing from the auricle into the ventricle.

Applying, then, these principles to the action of the heart, it is plain that, if the first sound were occasioned by the auricular systole—*i. e.* by passage of blood through the auricular valves—that sound could *never* be changed into bruissement by disease of the sigmoids; but it is incontestible that disease of the latter valves does occasion bruissement of the first sound†.

\* The names of six physicians are attached to our minutes of this case.

† The following abridged cases may serve as instances. Mary Andrews, in St. George's Hospital, May 9th, 1829. Our notes are, "impulse increased in force and extent. Left ventricular sound has loud and prolonged bruissement. If permanent, it is from contraction of an orifice; and as the bruit de râpe is very loud, it is probably from ossification." *Diagnosis*.—Organic disease of heart; ossification. *Section*.—Hypertrophy of left ventricle; cartilaginous rigidity of aortic valves; aorta beyond, ossified, scaly, rigid, and contracted.

Wm. Hidgley, in St. George's Hospital, April 7, 1830. *Impulse* increased. *Sound*, bruit de scie, (sawing sound); pulse 120, very small and weak, unequal. *Section*.—Hypertrophy of the left ventricle, less of the right. Aortic orifice contracted by fibro-cartilage to the size of a small pea. We are indebted to the kindness of Dr. Hewett, physician to St. George's, for the history of this case. The autopsy we witnessed and minuted.

Again, when the arch of the aorta is rough, or dilated, it produces a peculiarly loud, hoarse bruissement, above the clavicles, and this is exactly synchronous with the first sound of the heart\*. Now, as both these sounds are more or less prolonged, it is repugnant to reason that they can be occasioned by two successive causes—the one by the auricular, the other by the ventricular systole—and yet commence and terminate together.

Furthermore, on the hypothesis that the systole of the ventricle occasions the second sound by the collision of its internal surfaces, that sound ought to be accompanied with bruissement when the aortic valves are obstructed. But it is not; it is brief and clear as ever.

It is unnecessary to repeat, that when the sigmoid valves are greatly contracted, as in the case cited below, the ventricle obviously could not expel its contents with such velocity as to elicit a sound by the collision of its walls.

On our views the rationale of valvular bruissements is easy and consistent. When the sigmoids are obstructed, the ventricular systole is accompanied with this morbid sound to a greater or less degree, according to the extent of the lesion and the propulsive power of the muscle. The quality of the sound is also modified by the nature of the deposition.

When the auricular valves are diseased so as not to close, the ventricular systole is attended with bruissement, occasioned by the regurgitation of fluid into the auricle. The development of this sound is favoured by the abruptness of the aperture on the ventricular side†, and it is louder, *ceteris paribus*, in proportion as the ventricle is stronger.

The ventricular diastole (the auricular contraction of Laennec), likewise, is attended with bruissement when the auricular valves are diseased. But, as the aperture is naturally wide, the sound is frequently not developed unless the contraction is rather considerable. If, however, the ventricle be much dilated and thickened, a slighter degree of contraction, according to our experience, suf-

\* Vide Essays on the Diagnosis of Aneurisms of the Aorta, by the writer. Lond. Med. Gaz. Aug. 23, 1829, p. 391.

† According to the hydraulic law, that fluids escape with a more tranquil and copious stream from a funnel-shaped tube than from a simple aperture of the same dimensions.

fices to create the sound \*; for the increased quantity and velocity of the blood which enters, produces the same effect as a greater degree of contraction. Hence it appears that bruissement of the first sound is not a diagnostic sign either of disease of the sigmoid or of the auricular valves. But there are other collateral signs and symptoms, which, according to our experience, divest the diagnosis of the obscurity with which it is usually supposed to be involved. What, however, relates to this subject, and to the causes of bruissement in adhesion of the pericardium, nervous affections, &c. it is not our present purpose to notice, though we believe that these points admit of satisfactory explanation.

Though our limits have not allowed us to cite many cases in substantiation of the views which we have advanced, those views have been formed with constant reference to a great number carefully noted during the last eight years.

Finally, the confidence which we repose in our opinions, is founded less on experimental and clinical evidence individually, though both are, perhaps, of a convincing nature, than on the simple and consistent manner in which they reciprocally explain and support each other.

We had long ago been satisfied that, in consequence of the light which Laennec's principles, with a few exceptions, had thrown on the general symptoms of organic affections of the heart, there was no class of diseases which, on the whole, could be discriminated with greater ease and certainty. Still, however, a few signs remained inexplicable on those principles; and the doubt which these threw over some of the finer diagnostic distinctions, caused the whole subject of auscultation, as applied to the heart, to be regarded with an undue degree of scepticism.

The present views, so far as we can judge from their application to our own cases, appear completely to solve these remaining difficulties; and, if this be found universally true, they will establish the diagnosis of organic diseases of the heart on a firm basis, and render them easily intelligible to all.

The practical importance of such an improvement will be incalculable; and

it is only the conviction of this, which has induced us to undertake the present inquiry.

It is a trite exclamation that "diseases of the heart have wonderfully increased of late years;" which means nothing more than that they have been better understood, and more frequently detected. In short, it is now fully ascertained and acknowledged, that they are interwoven, beyond all former suspicion or belief, with asthmas, apoplexies, dropsies, rheumatisms, dyspepsias, and various convulsive or other nervous affections; and that, in febrile and inflammatory complaints generally, they give the pulse dangerously deceptive characters of hardness, fullness, weakness, or irregularity. What, then, is the consequence, if the state of the heart be overlooked by the practitioner? The apoplectic subject is ordered active exercise, to keep down his substance; and the dyspeptic, to improve his stomach: the asthmatic is tortured with a farrago of unavailing, not to say pernicious, remedies, and is perhaps bled to excess: the dropsical is treated with dangerous activity, or for imaginary affections of the liver or lungs: the rheumatic contracts an incurable enlargement of the heart; and the patient with fever or inflammation is bled too much, because his pulse is strong and full, or too little, because it is weak and irregular. In short, the treatment in all these cases must necessarily be ill-directed, and it may prove instantaneously fatal—an event which few practitioners of experience have not witnessed. "If," to use the language of Senac, "we would not pronounce rashly on an infinity of cases; if we would not harass our patients by noxious and unavailing remedies; if we would not accelerate death by treating certain diseases like others which are entirely different; nor be exposed to the disgrace of seeing our diagnosis falsified by the results of dissection; finally, if we would not have danger to be imminent, whilst we are under the blind impression that it is remote, we must study the diseases of the heart."

In conclusion, we have only to mention one other advantage, which we consider paramount to all. That these diseases may be recognized, by the improved means of diagnosis, when they are so slight as to constitute little more than a tendency: and that such ten-

\* Vide for instance, a case by the writer, *London Med. Gaz.* Sept. 5, 1829, p. 418.

dency may, in many instances, be completely subdued, and in still more, may be so far counteracted, as not materially—if at all—to curtail the life of the patient.

13, Lower Seymour-Street,  
August 18, 1830.

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BIOGRAPHICAL SKETCH  
OF THE LATE  
WILLIAM SIMMONS, ESQ.

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RECENTLY deceased, at his house in George-Street, Manchester, aged 68, William Simmons, Esq. surgeon.

This eminent man, after completing his scholastic education, commenced an apprenticeship of five years with Mr. Hinckley, a respectable surgeon, at Stone, in Staffordshire. From his strict attention to the duties of his situation, and his zeal in the cultivation of medical knowledge, he soon became a favourite pupil with his master, and was in a short time entrusted with the management of a considerable share of his practice. He did not allow the early opportunities thus afforded him of acquiring practical information to pass unimproved, but kept a regular record of every important case which presented itself to his notice. At the expiration of his apprenticeship he repaired to London, and entered as a pupil of St. George's Hospital. He remained in the metropolis during two winters, and attended various lectures with great assiduity, and amongst others those of Dr. Fordyce, Cruikshank, and the celebrated John Hunter. He always spoke of the late Dr. Fordyce in terms of the highest respect, and not unfrequently alluded to the useful information which he acquired from his valuable prelections on the practice of physic. On his return from London, Mr. Simmons revisited Stone, and entered into partnership with a gentleman of the name of Foster, but this connexion was not of long continuance, and in 1789 he determined upon trying his fortune in Manchester. In the beginning of the following year, a circumstance occurred which tended greatly to promote his advantage, by bringing his name early before the public. Owing to a serious misunderstanding between some of the trustees and the surgeons of the Infirmary, these gentlemen resigned office, when Mr. Simmons and five colleagues were elect-

ed as their successors. Having received the greatest number of votes in his favour, he was declared senior surgeon of the charity, and afterwards discharged the important duties of that situation, with honour to himself and benefit to the afflicted, for the almost unprecedented period of very nearly 40 years\*. To the exertions of Mr. Simmons the Manchester Infirmary is greatly indebted for the high character which it now enjoys as a school of surgery. He constantly directed the energies of his mind to the improvement of that institution, and his attachment to it remained unabated up to the last moments of existence. Frequent expressions of anxiety about its future welfare and usefulness fell from his lips during his last and fatal illness.

Being enthusiastically attached to his profession, he attended to his hospital practice with the most indefatigable industry, and afforded to his numerous pupils a bright example of an honourable and zealous public officer. He always evinced the greatest anxiety for the improvement of the pupils of the hospital, and spared no pains in qualifying them for the future duties of their profession. His name must ever be feelingly cherished by them: for his intelligent instructions they owe much of their reputation and success in life. Many of them now occupy responsible

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\* The following resolutions of the Weekly Board, and of the medical officers of the Infirmary, bespeak the high opinion entertained of his services by the Trustees of the Charity, and the great respect felt for his memory by his colleagues.

Manchester Infirmary Weekly Board,  
12th July, 1830.

Thomas Entwistle, Esq. in the Chair.

Resolved unanimously, that this Board deeply regret the great loss which the Charity has sustained in the lamented death of William Simmons, Esq. who for a period of nearly forty years discharged the important duties of senior-surgeon to these Institutions with distinguished skill and ability; and with such exemplary and uniform zeal, assiduity, and punctuality, as may be equalled, but can never be surpassed.

Manchester Infirmary, 8th July, 1830.

At a special meeting of the Physicians and Surgeons of this Institution—

In testimony of respect for the high character of the late William Simmons, Esq. and for the great zeal and ability uniformly displayed by him in the discharge of his duties as senior-surgeon to the Manchester Infirmary during the unexampled period of nearly forty years—

Resolved unanimously, that the medical officers express their wish to attend his funeral, if agreeable to the feelings of his family; and that Mr. Lloyd be requested to transmit a copy of this resolution to Mr. William Simmons.

(Signed)

JOHN MITCHELL,  
Chairman.



situations in different parts of the country, and it is not too much to affirm, that there is not one who would not acknowledge with gratitude his kindness, his assiduity, and his sound practical advice.

Mr. Simmons never delivered a regular course of lectures on surgery, but it was his uniform practice to give clinical remarks, at each morning visit, on the most interesting cases admitted into the hospital. The value of these clinical instructions can be duly appreciated only by those who were favoured with an opportunity of hearing him pronounce, in a clear and forcible manner, the results of his great experience and discriminating judgment. He was at one time very anxious to induce the officers of the Infirmary to co-operate with him in the delivery of lectures on the several branches of medical science, but failing to obtain their encouragement of the plan, it was ultimately abandoned. When, however, at a later period, owing to the laudable exertions of a few individuals, a School of Medicine and Surgery was formed in Manchester, he not only approved of the undertaking, but encouraged those who engaged in the task of lecturing by his presence and advice. From his long connexion with the Manchester Infirmary, which yearly admits on its books upwards of eighteen thousand patients, including more than three thousand accidents, Mr. Simmons had acquired a knowledge of the nature and treatment of surgical diseases which but few can ever hope to obtain. He had cut thirty-two patients for the stone, and with singular success, besides having performed the other capital operations of surgery on various occasions. He was by no means a brilliant operator, but he possessed a remarkable degree of nerve, coolness, and patience, which never forsook him under the most trying circumstances. Being endowed by nature with a quick eye, steady hand, and great self-control, he always conducted his operations with ease and confidence; and it may be truly said, with the most satisfactory results. The successful termination of his operations, however, may in a great measure be attributed to the excellence of his after treatment; for he did not rest satisfied with merely extracting a stone, extirpating a breast, tying an artery, or removing a limb,

and then committing the case to the care of pupils and nurses; but he mostly visited his patients three and four times on the day of the operation, and once or twice at least each succeeding day, until all risk of the sudden occurrence of inflammation or hæmorrhage was removed. In this way he was prepared to meet with vigour the very first symptoms of an alarming nature which might chance to supervene, and thus to avert that danger to life which too frequently attends the neglect of their early removal.

He was no friend to private inspections, but, on the contrary, in cases of death amongst his own patients, either from accidents or after operations, always made a point of having the post-mortem examinations conducted in the presence of the pupils of the hospital; and thus not unfrequent opportunities were afforded him of making valuable pathological observations.

Mr. Simmons was remarkable for his scientific management of fractures: he might, perhaps, incur the risk of being considered fastidiously particular in the application of splints and bandages; but his pupils could not fail both to admire and imitate his neatness. No dresser of his would ever venture a second time to put a splint or roller upon a fractured limb in a careless and slovenly manner, for he invariably animadverted upon such negligence in terms of severe but just reproof. In desperate instances of compound fracture, his practical skill was often apparent in deciding upon the propriety of delay or immediate amputation. In several cases of this kind, where the patients have even been placed upon the operating table, he has entered the room at that critical moment, carefully examined the nature of the accident, and strongly urged the trial of an attempt to preserve the limb; and the results have been highly favourable to his judgment. Most surgeons in the present day are capable of performing the different operations; but it requires the union of skill and experience to be enabled to form an *immediate* determination upon the necessity of an operation, as the only chance for the preservation of life.

In strangulated hernia, Mr. Simmons used the taxis with singular success; and he was in the habit of remarking,

that he had employed the knife for the removal of the stricture much less frequently than most hospital surgeons.

He was an early supporter of Mr. Baynton's plan of applying adhesive plaister to old ulcers of the lower extremities, and he considered the introduction of the practice as one of the greatest improvements in modern surgery. In a short paper, entitled "Observations on Baynton's Method of treating Ulcers of the Legs," published in the second volume of the *Annals of Medicine*, he remarks, "I now apply it in all cases where there has been a destruction of the common integument, and I find that it does more in one week than could be accomplished in several, according to the old method."

He was an earnest and able advocate of the practice of vaccination, and corresponded for some time with the illustrious Jenner on the best means of diffusing its salutary influence through the British empire. Notwithstanding the occurrence in his own practice of a few cases of small-pox after vaccination, his confidence in the antivariolous powers of vaccinia continued unshaken. When the late Mr. Bryce, of Edinburgh, proposed his plan of re-inoculation at the end of the fifth or beginning of the sixth day, as the test of vaccination, Mr. Simmons immediately adopted the practice, and ever afterwards continued it. He occasionally expressed his surprise that such a simple and sure test should be so little appreciated by the generality of practitioners, particularly in cases where professional reputation is so much concerned.

In 1824 he pointed out the benefit likely to accrue to the patients of the hospital from having several sulphureous, vapour, and medicated baths attached to that institution, and his suggestions were warmly sanctioned by the trustees. It was the constant aim of his benevolent mind to promote the comforts and remove the diseases of the poor; and he never experienced so much real pleasure and satisfaction as when engaged in the service of suffering humanity.

Amidst the avocations of an extensive private practice, Mr. Simmons found leisure to offer his mite to the stock of medical information. He was an early contributor to several valuable periodical works. Various communications from him have been printed in the *Edin-*

*burgh Medical and Surgical Journal*, in the *London Medical and Physical Journal*, in *Duncan's Annals of Medicine*, and in a work entitled "Medical Facts and Observations." Amongst other papers may be mentioned, "Remarks on Mr. White's Treatment of Sphacelus."—"Description of a Fœtus born without Brain and Spinal Marrow."—"On the Efficacy of Arsenic in the Treatment of Cancer."—"Observations on Cow-Pox."—"On the Efficacy of Digitalis in many Surgical Cases."—"On Scrofula, with Remarks on the doubtful Efficacy of Muriate of Lime in that Disease."—"Observations on select Subjects in Surgery."—"Case of Abscess of the Liver."—"Case of Strangulated Hernia during Pregnancy."—"Case of Wound of the Trachea."—"Apology for the Cutting Gorget."—"Observations on the Medical Use of Spiders' Web."—"Cases and Remarks on the external application of Charcoal."—"Description of an improved Screw Tourniquet."—"Two Cases of the successful Termination of Wounds hitherto deemed mortal; with Observations."

In 1798 he published his "Reflections on the Propriety of performing the Cæsarean Operation;" which led to an able defence of the practice by Dr. Hull. In the same year appeared his "Detection of the Fallacy of Dr. Hull's Defence of the Cæsarean Operation;" to which the doctor again replied, in a treatise well known to the medical public. It is unnecessary to advert to the several circumstances connected with this warm discussion on the merits of the Cæsarean operation; but it is pleasing to be able to state that the principal parties engaged in it were latterly on terms of intimacy and friendship. In 1808 Mr. Simmons published a small pamphlet, under the title of "Cases and Observations on Lithotomy, including Hints for the more ready and safe Performance of the Operation;" to which are added, Observations on the Chimney-Sweepers' Cancer, and other miscellaneous remarks." For several years preceding his death, owing to the more frequent occurrence of attacks of gout (to which disease he had an hereditary predisposition), and the increasing debility attendant upon them, Mr. Simmons had relinquished his connexion with the press. Although he did not desist from his professional duties until within a few weeks before his

death, still it was but too evident to his friends that his health had been gradually declining for many months. During the last winter, he first noticed a hardened and tumefied state of the abdomen, which was shortly followed by loss of appetite, great thirst, and frequent diarrhœa. For the removal of these symptoms he made trial of various remedies, but with only temporary benefit. His complexion became sallow, and his debility rapidly increased. He paid scrupulous attention to diet, and employed nearly the whole class of nutrients, demulcents, and tonics, with the hope of improving his strength; but the stomach and intestines seemed to have entirely lost their ordinary energy, for food of every kind passed through them very rapidly, and in an unchanged state. Hock was the only wine he could take without experiencing uneasiness in the bowels. The symptoms underwent but little change until the first week in May, when he was suddenly seized with acute pain in the lower part of the belly, which was much alleviated by the aid of leeches and blisters, but never altogether removed. This attack made so serious an impression upon his already enfeebled constitution, that it was thought advisable by his medical attendant to recommend an immediate change of air. He accordingly repaired to Lytham, and remained there for some weeks. During the first week he appeared rather better, but this improvement was only of short continuance, for he returned home in a state of extreme debility and exhaustion.

He remained much the same until the evening of the 2d of July, when a troublesome hiccup supervened. On the occurrence of this symptom, he remarked to a medical friend who stood near his bed-side, "Well, now the struggle will shortly be over." He sunk rapidly during the following day, and, with his faculties remaining perfect to the last, expired on the morning of the 4th. He endured his illness with the greatest patience and fortitude, and with the true humility of a sincere christian resigned himself to the will of God. His remains were followed to the grave by his colleagues and several of his private friends and former pupils, who were anxious to pay this last tribute of respect to a man who supported the dignity and honour of his profes-

sion, not only by precept, but by example. It would be improper to close this brief memoir of Mr. Simmons without referring to his moral qualities. He was distinguished for upright conduct, strict veracity, and inflexible integrity; and in the several relations of domestic life, the kindly feelings of his heart were eminently conspicuous.

J. L. B., M.D.

Manchester, August 21, 1830.

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#### ANALYSES & NOTICES OF BOOKS.

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"L'Auteur se tue à allonger ce que le lecteur se tue à abréger."—D'ALEMBERT.

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*Practical Observations on Leucorrhœa, Fluor Albus, or "Weakness;" with Cases illustrative of a new mode of Treatment.* By GEORGE JEWEL, Member of the Royal College of Surgeons, &c. &c.

THIS is an interesting little volume, and we think the profession under great obligation to Mr. Jewel for pointing out a new and efficacious remedy for a troublesome and noisome malady. We wonder, we confess, that in merely extending the knowledge of the remedial powers of the nitrate of silver, the name of Mr. Higginbottom, to whom we owe, in fact, all we know of the singular *contra-inflammatory* effects of this substance, is not once mentioned by Mr. Jewel. It would, we think, have been better for our author to have done, what all else will do, viz. to have associated Mr. Higginbottom's name with his own, in carrying the inquiry into the efficacy of the nitrate of silver, in the treatment of various diseases, one step further.

We do not know whether we can entirely coincide with Mr. Jewel in the following observations:—"It must be familiar to the practitioner, that every discharge, not sanguineous, which issues from the vagina, is, among females, usually included in the terms leucorrhœa, or 'whites.' There is also a popular opinion that vaginal discharges have their origin in constitutional or local debility; hence a complaint of this kind is denominated a 'weakness.' That such a term should be employed



to perpetuate an error in practice, is to be lamented; for, I believe, if we investigate the pathology of leucorrhœal discharges, we shall find them, most commonly, to have their origin in local excitement."

Leucorrhœa is so frequently the genuine and gradual effect of suckling too long continued—one of the purest sources of constitutional weakness—that we cannot doubt that this malady does arise from such a cause. This discharge is also so frequently left by very frequent labours and miscarriages, especially those attended by excessive hæmorrhagy, that we are constrained to regard a weakened state of the muscular and vascular structures of the uterus itself as a source of this malady. Then what can we say of the well-known and undoubted efficacy of the *secale cornutum*—a remedy, by the way, not noticed by Mr. Jewel—in quelling some forms of leucorrhœa? can this substance act in any other manner than by inducing a contraction of the vascular fibres of the uterus, and so arresting this discharge in the same manner as we restrain uterine hæmorrhagy? For similar reasons we are also compelled to dissent from Mr. Jewel, when he says (p. 9), "I believe the discharge seldom issues from the uterine cavity." How frequently, indeed, do we meet with cases in which the catamenial discharge only ceases by passing into one of leucorrhœa, and the latter ceasing for a day or so, to be superseded by the appearance of the catamenia? Surely the source of these two discharges is then the same. The difference seems merely to consist in the more or less tonic or relaxed condition of the capillary vessels.

That various local origins of leucorrhœa equally obtain, we also doubt not. It may be a little refinement to speak of "irritation, congestion, and inflammation;" but there may be ground for such distinctions. The whole of these remarks lead us, however, necessarily to observe, that the term "leucorrhœa" is little more than the designation of a symptom of various diseases, and not of an individual disease itself. And this view of the matter is of real practical importance; for our investigations should always be carried beyond the symptom. In the present case, if we term the malady leucorrhœa, and if we be, as all are, influenced by a name, we shall be led to treat many dissimilar

diseases as the same disease, and even the nitrate of silver will probably not cure all. Leucorrhœa arising from a morbid condition of the internal surface of the uterus, of the cervix uteri, and of the vagina,—and this morbid condition itself of varied character,—is not, in fact, to be regarded as the same morbid affection, and ought not to receive the same designation.

Mr. Jewel, indeed, treats of leucorrhœa as attendant on disease of the ovaria or Fallopian tubes, on hæmorrhoids, on the presence of ascarides, &c. so that he is fully aware of the fact just stated. But we think he would have done an essential service to the profession by fully exposing and correcting the error in the prevailing nomenclature.

The account which Mr. Jewel gives of the remedies of leucorrhœa occupies pp. 66—78. We proceed, however, at once to the remarks made on the use of the nitrate of silver in this affection. On the mode of operation of this remedy, Mr. Jewel's observations are precisely the same as those of Mr. Higginbottom.

"In the application of the nitrate of silver to the surface of parts, in a morbid or unhealthy state, a most obvious change is almost immediately produced, which (although we are incapable of explaining it philosophically) eventually terminates in healthy action."

This is the sort of observation which runs throughout Mr. Higginbottom's useful and meritorious volume.

Mr. Jewell adds—

"The mode I have adopted, in the application of this agent, has been either to conceal it in a silver tube, as it is employed in cases of stricture (except that the tube should be adapted to the size of the argent. nitrat.), or in the form of solution, in the proportion generally of three grains to the ounce of distilled water, the strength being gradually increased. A piece of soft lint may be moistened with the solution, and introduced, for a short period, into the vagina several times in the day; or a bit of sponge, firmly and neatly tied to the end of a slip of whalebone, may be passed into the vagina, up to the os and cervix uteri, well saturated with the solution. This can easily be effected by the patient herself. It is necessary that the application should be frequently repeated, or no permanent benefit can be expected. Should it become requisite

to employ a strong solution, and to apply it to a certain part, or ulcerated surface, it can be accomplished with a degree of nicety, by means of a camel's hair brush, introduced through the speculum, or dilator. This, however, can only be done in the absence of excoriations, or tenderness, as the introduction even of a common syringe sometimes produces a considerable degree of pain and irritation; independently of which, some females will not submit to the introduction of any instrument. In married women, there is not the least difficulty in using the dilator, neither does its introduction, under common circumstances, occasion any degree of pain. By means of this instrument, the condition of the cervix uteri and vagina can be readily ascertained."

Then follow several cases of leucorrhœa and of gonorrhœa treated by the nitrate of silver, from which we select the following:—

"CASE V.—Sept. 17th. J. R., 24 years of age, is suckling her first child, now seven months old. She has had a copious and incessant leucorrhœal discharge, with some degree of bearing down, during the last four months. The bowels are regular, and the functions of the stomach are not much disturbed. She complains of a violent pain, which attacks her in paroxysms, in the lower region of the abdomen, and in the pudendum, and there is a constant dull kind of pain about the neighbourhood of the coccyx. The cervix uteri is somewhat enlarged, and pressure with the finger gives pain.

"Ten ounces of blood to be drawn from the loins by cupping, and the following powder to be taken early in the morning.

"R Pulv. Jalapæ, gr. xxv.  
Potass. Supertart. ʒij.  
Pulv. Aromat. gr. iv. M. ft. Pulvis.

"19th.—The following injection to be used three times in the day.

"R Argent. Nitrat. gr. xxiv.  
Aq. Distill. ʒviij. M. ft. Injectio.

"24th.—The vaginal discharge is very nearly arrested, but she complains of great languor and sinking at the pit of the stomach, with loss of appetite.

"R Infus. Gent. Comp. ʒj.  
Ammon. Subcarbon. gr. v.  
Spt. Lavand. ʒss. M. ft. haustus  
omni mane sumendus vel urgente  
languore.

"Oct. 10th.—States that she has been a long journey into the country, and that the vaginal discharge has reappeared, with occasional severe pain in the region of the uterus.

"Twelve leeches to be applied to the groins. The strength of the injection to be increased (four grains of the nitrate of silver to the ounce of distilled water).  
Rep. Pulvis.

"15th.—There is very little discharge.

"Five grains of the nitrate of silver to the ounce of water, as an injection, to be used three times a day.

"Dec. 8th.—The injection occasioned some degree of pain at first, but she has used it regularly as directed.

"The leucorrhœal discharge has ceased entirely.

Rep. Haust. Amar."

"Dec. 9th.—A. R. a poor woman, 25 years of age, states, that she has been infected with gonorrhœa about three weeks. The vaginal secretion is highly acrid, and there is a glandular enlargement in the right groin. The lining membrane of the urethra is particularly sensible, and she complains of great soreness in the pudendum. Bowels confined.

"R Infus. Sennæ, ʒvss.  
Pulv. Jalapæ, ʒj.  
Potass. Supertart. ʒij.  
Syrup. Zingib. ʒss. M. ft. Mist. sumat  
partem quartam pro dosi.

"To take diluents plentifully, and to abstain from all stimulating food and drinks.

"11th.—R Argent. Nitrat. gr. xxiv.  
Aq. Distill. ʒviij. M. ft. In-  
jectio ter in die utend.  
Hydrarg. cum Creta, gr. v. bis  
quotidie.

"14th.—The symptoms are relieved, except the pain which is felt when the patient voids her urine.

"Continuenter Remedia.

"17th.—The vaginal discharge has disappeared, but the local irritation continues.

"To increase the strength of the injection (nitrate of silver, gr. iv. ad ʒj. Aquæ.)  
Capiat Mist. Purg. ut antea.

"23d.—In every respect much bet-

ter. There is no vaginal secretion, and she voids her urine without pain.

"To continue the injection.

"26th.—There is still a hardness in the groin, but, with this exception, the complaint is entirely removed."

We now beg to offer Mr. Jewel our unfeigned thanks for his excellent little work. It will do more to alleviate human suffering, and to secure happiness, than many brilliant discoveries: no mean praise! We believe the antiphlogistic virtues of the nitrate of silver in the cure of diseases still to be not half known. And we would call earnestly upon the members of the profession to give this remedy a full and fair trial in every variety of inflammatory disease.

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*Introductory Lectures to a Course of Military Surgery delivered in the University of Edinburgh.* By GEORGE BALLINGALL, M.D. F.R.S.E. &c. &c.

WE have too long omitted to notice this work; but the author and the public will acquit us of blame when informed that it was only at the eleventh hour that we were furnished with a copy, the one originally sent having miscarried.

Upon duty in either service, the practice of medicine is the department in which the army or navy surgeon is mostly called upon to exercise his professional skill, even during war; and in peace, almost entirely so. During war, however, he has not unfrequently to add to these medical duties the more serious and anxious ones of the most experienced operating surgeon, and in situations too the most unpropitious—very different indeed from the accommodation afforded in the theatre of a London or Edinburgh hospital. The military surgeon is frequently called upon to perform some of the most difficult and hazardous operations on the field of battle, possibly under a scorching sun—or exposed to the utmost inclemencies of the weather—to say nothing of the difficulties and danger in transporting those brave men afterwards over bad roads for considerable distances. In the naval service, in the cockpit of a man of war, the surgeon has other and various difficulties to encounter: his light is only that afforded by candles stuck into dense horn lan-

terns, and held by persons who, from the motion of the ship, cannot be steady, any more than the surgeon on whose dexterity depends the life of a gallant sailor; added to this, there is the noise of battle over head, and sometimes, from the rolling motion of the ship, a shot will come in through the cockpit, and either carry away the surgeon or his patient. This latter circumstance, we are well assured, actually happened off Boulogne, in Lord Nelson's memorable attack upon the gun-boats in 1801; and from the same authority we are informed, that the surgeon of a sloop of war, while at his post in action, lost his leg by a cannon-shot, and what is somewhat singular, the surgeon's name happened to be *Leg*. Then the wounded are brought down in such numbers that there is nothing like space sufficient for their accommodation, an inconvenience which was strongly felt in the engagement which occurred off Algiers in 1816, in several of the ships; and in one in particular (we believe the *Impregnable*) the surgeon states, that the thermometer in the cockpit stood at 160° of Fahrenheit while he was performing operations in this over-crowded and heated apartment. There are no kind "Sisters" either, in our fleets or armies, to second the duties of the surgeon. All is left to his own resources and that of his assistants—if he have any, which does not always happen; while with all these difficulties to encounter there is yet another, which must be extremely embarrassing—and that is, the surgeon is insulated, and cannot have the benefit or assistance of a consultation in cases of difficulty—an evil which has been forcibly and eloquently remarked upon by the author of the work before us.

The professional attainments of such young medical gentlemen as are intended for the public service ought to be of the highest order. The government seeing this, thought proper about eighteen years ago to establish a Regius Professorship of Military Surgery in the University of Edinburgh; and we may safely say that no chair in that celebrated school has been more ably filled than that of military surgery.

We say unhesitatingly of these lectures, that they ought to be in the possession of every medical officer in the King's service, for they embrace subjects which never before formed part of a course on surgery in this country.



The historical notice he has given of the rise and progress of military surgery is interesting, nor are we aware that the same kind of information is to be found elsewhere; neither ought the author's judicious remarks on the site of camps and hospitals, and on the transport of the sick and wounded, to be passed unnoticed. We heartily agree with him in the following sentiment, with which we close our notice of the work:—"sudden, arduous, and complicated, are often the duties which a naval or a military surgeon is called to perform; but well have those duties been sustained—the tried skill and humanity of our surgeons have been associated with the military glory of their country, and have divested the day of battle of half its horrors."

## ANALYSES OF BRITISH MEDICAL JOURNALS.

### NORTH OF ENGLAND MEDICAL AND SURGICAL JOURNAL.

No. 1. August 1830.

WE have pleasure in introducing another competitor for public favour to the notice of our readers. The North of England Medical and Surgical Journal has been established in a district abounding in populous towns and excellent hospitals, and we doubt not will prove an important addition to the medical literature of the day. The number before us contains several good communications, some of a general and others of a more local interest. There is, however, one disadvantage under which several of these papers appear, namely, that they are not completed. This ought as much as possible to be avoided, as an interval of three months is too long to be interposed between the parts of an essay which is intended to be continuous;—few will take the trouble to refer to what has preceded, and probably fewer still will retain it with sufficient accuracy in their memory. Of some of these we shall speak when they are completed.

Among the contributions one attracted our particular notice, coming as it does from the pen of one whose name stands in the first rank of modern surgeons—the late Mr. Hey, of Leeds. This paper we shall take the liberty of extracting.

### *On Deformities of the Human Fœtus.*

By the late WILLIAM HEY, Esq. of Leeds, F.R.S. &c. &c.

It is almost universally received as a truth founded on experience, that the fœtus in utero may be marked, deformed, or mutilated, by any sudden agitation of the mother produced from fright or external injury; and this opinion is so firmly established, that it is frequently the source of much uneasiness to a tender parent, and even increases the real dangers attendant upon the pregnant state.

This subject deserves a serious investigation: for if it should appear to have been received upon insufficient evidence, a discovery of the fallacy may contribute greatly to the relief of many of our fellow creatures.

Before I proceed to examine the evidences of this supposed fact, I shall state the case more particularly; and shall make a few remarks on the process of the human mind in reasoning from experience.

The received opinion is this, that the fœtus in utero is not only liable to be affected in general, by anything that greatly agitates the mother, but that the specific injury received by the child corresponds with that inflicted upon the mother. As, for instance, it is believed that if the mother is much surprised by a bunch of fruit thrown against any part of her body, the fœtus will, or at least frequently does, receive an indelible impression upon the corresponding part of its body; and that this mark shall evidently appear to have arisen from the impression made by the fruit upon the mother, not only in having the exact appearance of the fruit, but also in undergoing a change of colour similar to that of the fruit in ripening, and synchronous with those changes produced in the fruit by the seasons. Impressions upon the skin of the fœtus are supposed likewise to be made by small animals thrown at the mother, so that if the mother has been hit by a mouse, for example, the figure of that animal shall appear upon the child, and upon that mark the skin shall be so far changed, that the cuticle shall be covered with down instead of the natural hair of the human body.

It is asserted likewise, that a wound made upon any part of the mother's body shall inflict a corresponding wound on the fœtus—that is, a real division

of the skin and flesh of the fœtus, attended with the same appearances as those found on the mother, and proceeding in the progress of healing in the same manner.

It is farther believed, that the very sight of a disgusting object shall, by the surprise of the mother, produce even a complete mutilation in the infant, so that a child has been born with the want of a leg or arm, from a fright which the mother sustained by seeing unexpectedly the stump of a maimed person, who had lost one of those limbs.

These various injuries to which the fœtus in utero is liable, are not supposed to be confined to any period of pregnancy, but are said to be capable of happening at any time before birth; even when every part of the fœtus is completely developed, and is possessed of its due form, size, and texture.

In these cases it is not supposed that the event is produced by any immediate miraculous interposition of the Deity, but that it comes to pass in the ordinary course of nature, and does not contradict any of the known established laws of the animal economy.

In my investigation of this subject I shall adduce no arguments *à priori* to shew that these supposed facts are either impossible or improbable in their own nature. I am well convinced that all our knowledge of natural things must ultimately rest upon the simple but firm basis of experience; and I am satisfied that it is from the constant concurrent existence of events that we gain the very ideas of cause and effect. But then it is the business of philosophy and common sense to take care that the rare or occasional concurrence of any two events do not lead us to conceive of them as standing in this relation to each other. Without this care our knowledge will become uncertain and chimerical; our conclusions will be irresolute or erroneous; and our assent will degenerate into a childish credulity.

“So ardently,” says Dr. Reid, “do we desire to find every thing that happens within our observation, thus connected with something else, as its cause or occasion, that we are apt to fancy connexions upon the slightest grounds. I remember, many years ago, a white ox was brought into this country, of so enormous a size that people came many

miles to see him. There happened, some months after, an uncommon fatality among women in child-bearing. Two such uncommon events following one another, gave a suspicion of their connexion, and occasioned a common opinion among the country people, that the white ox was the cause of this fatality. False hypotheses, and true principles in the philosophy of nature, are built upon the same foundation, and are distinguished only according as we conclude rashly from too few instances, or cautiously from a sufficient indication.”—*Inquiry into the Human Mind*, p. 55, 56.

It is astonishing to consider how capable we are of imposing upon ourselves, and how ready to foster the imposition, when the mind is unduly influenced by self-interest, by a superstition regard to the antiquity of our opinions, or a too eager search after novelty. We shut our eyes sometimes against the clearest light, and our very abilities themselves often make us the more dexterous in self-conceit.

In our ideas of cause and effect, we do not always suppose the latter to be immediately connected with the former; in many instances we conceive the existence of the latter to be remote from the former; yet our conclusions may be just, even where we cannot perceive the intermediate events which connect them; provided we know this connexion to be certain, and that the latter never does come into existence without the former. Truth does not require that we should refuse to acknowledge any event to be the cause of a subsequent event, till we can discover something in the cause which shall appear to us adequate to the production of the effect; but a discovery of the connexion is absolutely necessary to our forming a rational idea of cause and effect. We can discover no power in the congress of the sexes adequate to the production of so curious a machine as the animal frame; yet since we certainly know that this inimitable machine is never produced without such congress, we are authorised to consider these events under the relation of cause and effect. And could we discover the same connexion between the deformities of the fœtus and the impressions made upon the mother during pregnancy, the common opinion would be as just in the

latter case as it is in the former. How far this connexion does really subsist, we will now consider.

The facts alledged respecting the deformities of the fœtus are false. It is true that children do come into the world having the skin marked in patches with unnatural colours, which, with some vigour of imagination, may be thought to resemble various kinds of fruit; but I have never yet seen a mark that bore such a resemblance of any fruit, that the same opinion would have been pronounced concerning it by any three indifferent persons, unacquainted with the fears of the mother, or the incident said to have produced the impression.

I have often seen the human cuticle covered in places with fine hair resembling down, but never saw this down assume the shape of any known animal. Much less have I seen any changes in these marks, which had the least relation to the gradual alteration effected by time in the vegetables or animals, which the marks were thought to resemble. I have had the opportunity of examining many of these supposed impressions and resemblances, but never saw them undergo any other change in colour or appearance, than such as occasional heat or cold would produce.

It is true that children are born with preternatural tumors on many parts of the body; with additional or mutilated members; and with such defects in various parts, as may have some distant resemblance of the frightful objects or injuries supposed to have caused them; but the disparity in almost all the cases that have come under my inspection has been sufficiently apparent to convince me, that prepossession, rather than candid observation, has led to the conclusions usually formed in such cases.

The objections which I have to make against the supposed cause of these deformities may be comprised under two heads: first, that the known laws of the animal economy must be infringed, upon the common supposition; and, secondly, that the concurrence of these deformities with the fears or hurts of the mother are so rare, that we are not led by the principles of just reasoning to consider them as cause and effect.

1. There is a regular progress in the growth of the fœtus, extending to all parts of its body. Every part of a limb acquires its proper shape and size at the

same time, and there is in every part a gradual advance towards maturity. Now if we examine a fœtus deformed by any additional member, we shall generally perceive, that the adventitious member is subject to this general law in the animal economy. If there are more than the usual number of fingers, for instance, as was the case in a child lately shewn to this society, the additional fingers appear to have had the same origin with the rest: the nails appear on them all at the same time, and at whatever period of pregnancy the infant is born, there appears to be an equal maturity in the natural and preternatural parts.

Are not we necessarily led by these observations to the idea of an *original* mal-conformation? If this deformity had arisen from some fright which happened after the natural fingers had been completely formed, the additional ones must have had a very different appearance from the rest, according to the above-mentioned law of nature.

2. It is well known that the bones of a fœtus, while enveloped in their membranes, will remain for many years in the body of the mother without corruption. The case of extra-uterine fœtuses demonstrates this. The bones, even when separated from their usual coverings, have been known to make their way gradually through the belly or anus of the mother, after considerable intervals of time. Yet it was never known, I believe, that the bones of any fœtus mutilated by natural deformity were discharged along with the fœtus itself. The fœtus lately shewn to you wanted a considerable portion of the bones of the leg, yet it was expelled without being accompanied with any bony fragments, which might lead one to conceive that the bone now wanting had never existed. I have seen more fœtuses than one, with the upper hemisphere of the brain uncovered by bone, yet no fragments of the cranium were found with the fœtus.

Another law of nature must therefore be broken, by admitting that this deformity can happen, after the limbs have been completely formed.

3. In all deformities that have the resemblance of a wound, we find the parts healed in a manner not agreeable to the natural process of healing; as in the hare-lip. No division of the lip healed according to the uniform laws of nature can put on the appearance which is ob-



served in this deformity. To explain this argument it is necessary to observe, that the lips are in part covered with a kind of skin, peculiar to themselves, which forms an elegant border to the mouth. This skin, when the lips are divided by a wound, does not pass along the margin of the divided parts, but the wound when healed is covered by a common scar, such as covers a healed wound in any other part of the body. But in the hare-lip, that red covering of a determinate breadth, skirts the parts divided by nature, and covers the preternatural as it does the natural divisions of the lips. Plainly pointing out, that this deformity could not have been produced after the lips were completely formed, but must have taken place from the first formation.

4. These instances may suffice of cases open to common observation; but anatomy makes us acquainted with many other circumstances utterly irreconcilable with the common opinion concerning deformities. There is a disease called *spina bifida*, which exhibits externally a tumor on the back of a new-born child; or if the skin is burst, a small wound appears, and a hole may be felt in the back-bone. This has been referred, I doubt not, to some wound or other injury which the mother had suffered in her back. But a dissection of the part shews, that no injury after the spine was perfectly formed could have brought it into that state which constitutes this disease. For there is either a small hole through which some part of the spinal marrow, with a serous fluid, issues out; or the bones of the spine are regularly divided, as at the rump, and the spinal marrow takes an extraordinary course, without any appearance of injury. There are likewise abundance of interior *lusus naturæ*, as they are called, irregularities in the number, structure, and position of the parts, which seem not to have the most distant relation to the fears or accidents of the mother.

There are not unfrequently found additional or defective muscles; irregularities in the course, ramification, or number of the arteries, and the like. And sometimes, as in the case lately presented to this Society, the most necessary vital organs and characteristic external parts are wanting: so that the human fœtus has scarcely re-

tained any of the distinguishing features of humanity. But what kind of injuries or frights must they be that can deprive a child, completely formed, of its brain, its heart, stomach, and lungs; its eyes, nose, mouth, and ears; and yet leave no vestiges of these once subsisting organs? It would surely exceed the belief of the most credulous or prepossessed, to refer these defects to any thing less than an original mal-conformation.

2. But on supposition that the commonly received idea of the origin of natural deformities were not repugnant to the animal economy, are these deformities always, or commonly preceded, by some fright of the mother? And are these agitations in the mother constantly or usually followed by some deformity in the child?

I know of no well authenticated testimonies that would lead one to believe either the one or the other. My own experience directly contradicts them both.

1. It is now a quarter of a century since I became engaged in a profession which has given me an opportunity, not only of seeing many deformities in new-born children, but also of inquiring minutely into the state of the mother during pregnancy, both with relation to the injuries she had received, and the fears which had been excited. In no case of deformity, where I have had an opportunity of inquiring early into the condition of the mother during pregnancy, (perhaps before the deformity was known to her,) has there occurred any circumstance which could lead one to attribute the deformed state of the child to the fears of the mother. Nay, in almost all these cases which I have met with, the mothers have assured me, that they never were frightened or hurt during pregnancy. It has been matter of surprise to me that the mothers of such infants have not expressed those very common, though groundless apprehensions, which so very frequently cause some uneasiness to pregnant women.

2. On the other hand, the instances are very numerous of pregnant women being hurt or frightened, without the least injury to the fœtus. I have seen many instances of great anxiety, on account of some accident which made a sudden impression upon the mother;

but I never yet, that I remember, saw such fright followed by a deformity of the child.

In short, were I to frame an opinion founded solely on my own experience, it would be this: that women are more apt to have deformed children when they are not frightened during pregnancy, than they are when such frights have occurred. This is a fact which has rather surprised me; yet I have no reason to look upon it in any other light than as matter of mere accident. However, I make no doubt that the fear and the deformity have often concurred. Amongst the vast number of pregnant women, which is always existing, some cases will be occurring to favour the common opinion; these are spread abroad with rapidity—they are often talked of, and long remembered; but until the concurrence of the fright and deformity is better established, the common opinion seems to rest on no better foundation than that which resolved all the miscarriages in Scotland, in a certain year, to the appearance of a white ox.

Some persons, I believe, have thought well of the opinion I am opposing, from a supposition that the sacred writings have given countenance to it. When Jacob placed his peeled rods before the cattle, then the young ones were spotted and ring-straked. To this authority I wish to pay the most profound deference; and had the determination of this question been really matter of divine revelation, I should not have set up any conjectures of my own in opposition to it; but I think the Bible contains nothing contrary to the sentiment I have been defending. For not to urge that there is an appearance of miraculous interposition in favour of Jacob, which might coincide with his own opinion, or that which was then prevalent on this subject, it appears that the effect was produced not *after*, but *during* conception. “And the flocks *conceived* before the rods, and brought forth cattle ring-straked, speckled, and spotted.”—Genesis, xxx 39. Allowing, therefore, that the appearance of the rods was, in the most strict sense, the cause of those particular colours in the cattle, yet the impression producing those colours must have happened at the first formation, which is the time when, according to my idea, the future form of the fœtus is determined. If, then, the

sacred writings meant to say any thing on this subject, their decision is rather in favour of the notion I have attempted to support.

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## MEDICAL GAZETTE.

*Saturday, September 18, 1830.*

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“*Licet omnibus, licet etiam mihi, dignitatem Artis Medicæ tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso.*”—CICERO.

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### THE LATE COMMISSION DE LUNATICO.

THE proceedings of the Court of Inquiry in Mr. Brand's case terminated on Wednesday, the 1st inst. the jury finding “that Mr. Brand was a *lunatic without lucid intervals*, and incapable of managing his own affairs since the 1st of April last.” We have nothing to object to this “very satisfactory verdict,” as it was called by the chief commissioner, for we are persuaded that it was perfectly right in point of fact; but we cannot help observing, before we come to say a few words on the nature and tendency of those commissions generally, that to a medical man, whatever it may to the gentlemen of the law, there is something curious in the wording of the verdict,—“a *lunatic without lucid intervals*”—when, by all the usually received definitions, and so far as definitions in questions relating to soundness and unsoundness of mind are worth any thing, lunacy essentially depends on the existence of those intervals. A case in which unsoundness of mind is untended by any revisitings of reason being generally understood to be one of unequivocal madness: lunacy, in fact, being that particular species of it which is characterized by intervals of reason. But this we mention merely as an *obiter* for our legal friends, who are commonly so anxious about precise defini-

tions : it may be good in law, though we have our doubts about it, to talk of a lunatic without lucid intervals ; but to medical ears we must say it sounds rather loosely, and with less precision than we should have expected from the gentlemen of the bar.

The length of time occupied in arriving at this decision is another circumstance worthy of note when treating of this inquiry. It lasted eight whole days, and was pending nearly a fortnight, the first day of sitting being the 16th of August. To those who only read the evidence as reported in the newspapers from day to day, it must have appeared, that though there was much time occupied, and the proceedings were conducted in an insufferably tedious manner, yet that there was still some reason for delay ; the evidence, as published, not seeming to warrant a speedy decision. Some of the newspaper readers, and writers too, have even gone so far as to express their dissatisfaction, or at least their doubts, about the propriety of the verdict. But nobody who was present, and heard the evidence, and watched the conduct of the supposed lunatic during a few hours on any day during the inquest, could entertain any other opinion than that of the perfect insanity of Mr. Brand. The evidence was not all published—the material parts were all omitted—they could not be published, for they were utterly unsuited for the public eye. To form a fair opinion, therefore, from what did appear, was not possible, and this may afford a reasonable excuse for the dissatisfied. But we must again repeat that there was nothing in the actual evidence to warrant the lengthened and monstrously expensive investigation which has taken place. It is a serious thing, no doubt, to come to a verdict hastily—to pronounce on the sanity or insanity of a fellow-being—to secure to him, or to deprive him of, the manage-

ment of his own property—to grant or to deny him his personal liberty ; but it is unquestionably a far more serious thing to come to a resolution on the criminality of an individual—on which his life or death must depend—the forfeiture of property and personal liberty in such case being deemed a consideration of no account ; and yet this is done almost daily, without a murmur at its impropriety or injustice, and in the most difficult cases, in about as many hours as this inquiry has occupied days. A judge and jury are allowed to be perfectly competent to conduct one investigation—why not the other ? The proceeding by judge and jury is conducted without expense to the accused party or his friends, while the commission method is carried on, as is well known, in the most lavishly expensive manner possible. We are the more willing to institute this comparison from the circumstance of its being optional with the Lord Chancellor how he will have the inquiry conducted. This is a fact which ought to be better understood. The Chancellor may, if it so please him, commit the examination and decision on cases of alledged lunacy to one of the Barons of the Exchequer.

It is generally supposed that one of the principal objects for which the commission *de lunatico inquirendo* in the usual way is instituted, is to save the property of the supposed lunatic from being squandered, and to preserve it for the benefit of his heirs at law. The principle is wise and humane, but we shall see with what notions of economy and justice it is acted upon. A jury of three and twenty persons is assembled, forming a court over which three gentlemen preside—civilians or chancery barristers—persons certainly unconversant with the common law bar, where the rules of evidence are best understood and best reduced to practice, and where habits of doing business effec-



tively and with dispatch are best to be acquired. There is an ineptness then about this tribunal which renders it peculiarly ill suited for the prompt discharge of its duty; rules of evidence partially understood are as partially acted upon; whole volumes of irrelevant matter are received with pleasure by the commissioners; there seems to be no limit to the reception of evidence; no inquiry as to its nature, tendency, or effect; witnesses are permitted, and invited too, to speak as to the most trivial circumstances within their knowledge touching the subject of the inquest, and "trifles light as air" are detailed, gravely listened to, and duly entered on the minutes of the proceedings. The sittings, besides, may be prolonged for a week, a month, or a year, by way of elucidating a truth which a tenth part of the time would have served fully to ascertain.

All this, it must be admitted, is very absurd; but it is worse—it defeats the original good intention with which the process was begun. The expense destroys the property which it was meant to preserve, whilst the tediousness of the commission tortures the unhappy individual whose destiny is at stake, and most effectually serves to harass the minds of the jury. In conclusion, we cannot but express our regret and surprise that the new lunacy act—bearing date so lately as the middle of July last—while it provides at considerable length for the management of the property of the lunatic, contains not one clause by way of remedy for existing evils—not one word by which that property might in the first instance be protected by annihilating the power of this ruinous and arbitrary commission.

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## CORK ELECTION—DR. BALDWIN.

It may well be supposed—after the frequent avowal of our sentiments in this Journal on the propriety and expediency of medical men starting for seats in Parliament—it may well be supposed that we have not been inattentive observers of the progress of the late general election. We have in truth looked round with much interest to see if any instance of the kind should have occurred; and we believe we can only record a single one in which a member of the profession stood candidate for a seat. This was in Cork. In the contested election lately for that city, of the three candidates who started, Dr. Baldwin was the popular man—emphatically the man of the people. Distinguished by his eloquence, his talent, integrity, and every other desirable qualification for a public man, he had been known to his fellow-citizens for upwards of twenty years as an individual highly gifted with the virtues which adorn private and social, as well as professional life. The Doctor has long been at the head of his profession in Cork—independent in wealth as in principles—enjoying, besides the possession of an hereditary property, an income from his practice amounting to between two and three thousand a year. This, of course, is being a rich man in a provincial city: yet it is highly creditable to him and his constituents, that his riches have suffered no diminution by the contest; it was, in fact, his repeated boast on the hustings, that the 400 freeholders whom he polled did not cost him so many farthings. Of this boast, however, it is utterly impossible to appreciate the value, without hearing what Mr. Hely Hutchinson, the late representative, has said in his printed farewell address to his supporters. "Unfortunately," writes Mr. H. "I find that the return of the representatives does not depend upon those electors

who are influenced by public principle in the disposal of their votes. Corruption has grown to such an extent, and has been reduced to so complete a system, while the appetite to be purchased has been so increased by repeated contested elections, that it was impossible for any rational man not to feel that, by embarking in a contest to represent you, he exposes himself to an unlimited expenditure of money; and that he can only secure his return by having recourse to those voters who are influenced by pecuniary considerations in the exercise of that important franchise. It is therefore, with deep regret, I find myself compelled to inform you, that it is not my intention to enter into a contest," &c. With such a prospect before him—of getting into Parliament for Cork *in the usual way*—it would evidently have been little short of madness in Dr. Baldwin to attempt it; but fortunately it was not necessary for him to incur this risk, or to stoop to this degradation. He was invited by some of the most opulent members of the constituency to come forward and offer himself to the electors: he complied, and for seven days, as we have already said, maintained an honourable contest with two competitors—one of whom had served for the city in the last Parliament, and the other was the Hon. Mr. Boyle, son of the present Earl of Cork. On the hustings the Doctor was cheered "to the very echo" for his readiness, his firmness, the honest avowal of his principles, and the copiousness of his oratory. In each of these—but incomparably in the last—he left his fellow-candidates far behind him; and though not eventually successful, he can glory in the reflection that the freeholders—all the respectable unbought freeholders—were with him; whilst the deficiency in his numbers was entirely owing to the corporation party—the *freemen*, being otherwise engaged. With the

politics of Dr. Baldwin we have nothing to do—nor do we much care whether he is Whig or Tory—but we cannot help regretting that a man so highly valued by the discerning—not *few* (having had four hundred honest voters with him, along with the hearts of the people generally)—a man so highly endowed with learning, eloquence—and, on the whole, so accomplished for the management of public affairs—should not have succeeded in his praiseworthy ambition. It is to be hoped he will not lose sight of this object; the period may not be far distant when he may be more fortunate and prosperous. As it is, we understand he may yet come in for a seat, by the disqualification of Mr. Callaghan—the Doctor petitions against this gentleman as a government contractor.

#### LONDON UNIVERSITY.

EVERY week brings forth changes at this institution. Mr. C. Bell has resigned the Professorship of Surgery, and Mr. Pattison has been appointed in his place. Mr. Pattison retains, also, the Anatomical Chair conjointly with Mr. Bennett.

#### HOTEL DIEU.

*M. Dupuytren on Wounds produced by Fire-Arms, especially those received in the late Revolutionary Struggle.*

[Continued from p. 925.]

THESE, however, were not the only weapons made use of; swords and lances were employed. In one of the wards there is a severe case of sabre wound: the cut traversed the upper and right portion of the chest; but the patient is recovering, and only complains of stiffness in the muscles when he moves the part. M. Dupuytren has had no case of wound from a lance on this occasion; the neighbourhood, indeed, of the Hotel Dieu is not the most convenient for a charge of cavalry.

Two patients have been taken into the hospital wounded with shot. This must have arisen from some awkwardness or mistake on the part of the people, for the soldiers certainly had no such ammunition. One of the patients, a man, received the discharge in his left arm and the left side of his chest; the other, a female, has had her belly and thighs absolutely riddled with it.

Many of the citizens have been severely injured by the bursting of their fire-arms; in their hurry they took them up and used them without cleansing or repair. The arms which proved most available were the fowling-pieces, which were chiefly borrowed from the gunsmiths' shops: the balls they carried were smaller, nor did the pieces carry as far as ordinary firelocks; but they were more handy, and hit their mark better. It was for charging these that the hammered balls were used; and the wounds were so much the more severe: an oblong piece of lead of this sort whirls through the air, and commits more mischief by far than a spherical bullet. Notwithstanding the vast quantity of old swords, cut and thrust weapons, foils without buttons, spits, and instruments of that kind, with which the people were armed, there has not been an instance of a soldier, wounded with such arms, received into the Hotel Dieu; but several of the citizens have been, and most of these were injured by their own party, who were engaged in protecting their property from plunder.

It is remarkable, too, that no soldier has been found wounded with the paving stones, which for want of better ammunition were rammed into the cannon. From the leg of one man, however, M. Dupuytren extracted a *billiard ball*: it was not very deeply lodged. The wounds inflicted by the military were, as might have been expected, more numerous and more severe than those produced by the citizens; and, generally, the wounds from the regular field-pieces and firelocks have been found more serious than those from the hunting guns and carbines. One fact more ought to be mentioned, which at first may seem to contradict what has been just said as to the relative severity of the wounds on either side. Sixty-two was the number of wounded military received into the Hotel Dieu, and their wounds were in almost every instance

severe: out of the sixty-two, seventeen died—more than a fourth part. But it should be added that none of the military were carried to the hospital except those who were too badly wounded to drag themselves away, or who could not be removed from the spot by their own party, ill provided as they were with means of carriage: they dreaded the fury of the people, and accordingly the wounded, who were abandoned by their comrades, proved to be very bad cases indeed. The Hotel Dieu commonly contains from 900 to 950 patients. On the evening of the 26th there were in the hospital 901; the next day 362 were sent home, or to other asylums—the Salpêtrière, &c, and their places filled up by 386 wounded persons: so that there was no cramping or crowding for want of room—there was no inconvenience, as was very improperly reported. The hospital would have held 1000 without inconvenience, if necessary.

After some preliminary remarks on splinters, or shattered pieces of bone, produced by gun-shot wounds, and which he formerly (in 1814) divided into primitive and consecutive, but now into three kinds—primitive, consecutive, and tertiary, chiefly with reference to the extent and connexion of the injured parts, M. Dupuytren proceeded to make some observations on what are usually denominated *spent balls*.

It has been supposed that a cannon-ball, or common bullet, has not, at the commencement of its course, that impetus which it has acquired when its course is half finished. M. Dupuytren has not found it so. It is, however, a fact, that a bullet half-spent does much less mischief than when it hits after having passed over a greater distance. When nearly spent, it has not force enough to displace the parts easily, and becomes itself considerably altered on its surfaces. But projectiles of this description are attended with great danger; they frequently produce violent and horrible contusions. In 1814 there was in the Hotel Dieu a man whose loins were entirely discoloured, of a violet hue, in consequence of a bruise from a spent cannon-ball; the whole of the soft parts in that region were seized consecutively with gangrene. The skin, in these cases, usually remains entire, but it is completely disorganized.

The effects of shot received at dif-



ferent distances are remarkable. A ball that strikes at the distance of three, four, or six feet, though, some say, without its full force, is more dangerous than one that hits at thirty, fifty, or a hundred paces distance. For, in the former case, the ball is not the only projectile that penetrates into the wound—it carries with it the wadding; and the presence of this, and of bits of cloth, and grains of unexploded powder in the skin, forms the best ground for judging whether the wound has been received from a great or small distance. When it is the latter, the orifice of the wound is wide, unequal, jagged, and dangerous. But received from the distance of about a hundred paces, the aperture is more neat and regular, and the bones are more neatly broken; most frequently, too, there is an aperture of egress as well as of entrance, and they are readily distinguished. The entrance aperture is the smaller—evidently as the ball enters with force undiminished; in penetrating, however, through the tissues, it loses that force, and displaces the parts, forming a perforation conical in its shape—not cylindrical. At the end of its career, as already mentioned, a bullet will not produce any solution of continuity, but a contusion only, more or less violent and dangerous according to circumstances. If it alight on a place where there are hard and soft parts both, the integuments will not be ruptured, but the bone may be broken. Just as when a carriage-wheel passes over a man's body, though perhaps laid on a soft bed of mud or sand, it breaks the bones without perhaps injuring the soft parts. It is thus too that the oak is shattered, while the reed withstands the storm.

Before he entered on the subject matter of the next lecture, M. Dupuytren exhibited a plank, about an inch in thickness, through which he had some musket balls discharged. He pointed out the difference between the apertures of entrance and exit—the first small, round, and smooth; the others much larger, and with a splintering margin: a distinction owing not only to the superior quickness and force of the projectile at the moment of its entrance, but to the want of support of the posterior surface of the plank. The remarks apply to balls which strike a body perpendicularly; but there are

other observations worth attending to with regard to bullets which are turned from their course by the oblique resistance of bodies. A cannon-ball striking in this way a hard substance, is not broken, but it is reflected, and comes to the end of its career with less, yet considerable force. But musket-balls not only deviate, but are disfigured and broken: a musket-ball, in fact, is composed of an inelastic metal, soft enough to receive any modification of shape when struck against a hard solid; if it strike a wall, it is more or less changed in shape, its surface becomes irregular, and in consequence the wounds it inflicts are more lacerated and severe, though it may not have preserved all its force of impulsion. I committed an error, said M. Dupuytren, on a former occasion, when I stated that a marble (*bille de marbre*) could not fracture a bone: in the Gros-Caillon three or four have been extracted, and in one case the clavicle has been found fractured by this projectile.

The Professor next proceeded to offer some observations on the arrangements adopted in the Hotel Dieu for the accommodation of the wounded. A band of carriers with litters was appointed early on the morning of the 28th, and eight or ten of these vehicles were in constant requisition during that and the following day, in every quarter around the hospital. But this arrangement had its inconveniences: the wounded not only suffered in these removals, but were irritated in many instances by the sight of the military. It was with difficulty they were induced to withhold their hands from an officer of the Royal Guard, who was generously carried off the field by the very party that wounded him.

Some most interesting reflections of M. Dupuytren on the moral and physical condition of the wounded, we are obliged to postpone till our next number.

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#### NOTICE.

WE have received a letter, signed "A Professor of the London University," pointing out some inaccuracies in the account of the fees given in our last. We have sent it to the correspondent by whom the former notice was forwarded, and shall return to the subject next week.

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W. WILSON, Printer, 57, Skinner-Street, London.

# THE LONDON MEDICAL GAZETTE,

BEING A

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SATURDAY, SEPTEMBER 18, 1830.

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## LECTURES ON SURGERY,

*Delivered at St. Bartholomew's Hospital,*

BY WILLIAM LAWRENCE, F.R.S.

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### LECTURE LXXXIII.

*Strangulated Femoral Hernia—Means to be adopted before Operating—Taxis—Warm Bath—Venesection—Tobacco Clyster—Operation—Inguinal Hernia.*

WHEN a rupture is rendered irreducible, either by increase of the bulk of the protruded parts, or by their adhesion to the sac, the patient is exposed to all the inconveniences of a permanent tumor, which probably increases regularly, and to the constant risk of the occurrence of strangulation; hence it is very desirable to convert a hernia from the irreducible to the reducible condition, even if nothing more than that can be done. You may sometimes succeed in effecting the return of a hernia, if it has not been long unreduced, by putting the patient on low diet, exhibiting active aperient medicine, and applying cold to the swelling, so as to diminish the bulk of the protruded parts; and indeed this has been attempted with a view of accomplishing the object even after the hernia has remained irreducible for a long time. You will of course understand that there is no chance of effecting the return of herniæ which are rendered irreducible by adhesions; but when we cannot understand exactly the nature of the obstacle to reduction, it is right to make an attempt to return the hernia if it has not been long in the irreducible state.

It may be a question whether you would, under any circumstances, think it right to propose an operation for accomplishing the return of the protruded parts in an irreducible hernia, when they cannot be replaced in any other way; whether, supposing the obstacle to depend on adhesions, you would

think it right to open the hernia, separate those adhesions, and carry back the parts into the abdomen. Now all the objections which I mentioned to you as applicable to this proceeding for the radical cure of reducible hernia, are applicable to the operation in this case also. An irreducible rupture is only an inconvenience and a source of risk to the patient; but the operation which you perform immediately endangers his life. As a general rule, therefore, the operation in question is not admissible under such circumstances; though we cannot, perhaps, lay down absolutely that it should never be performed. I remember the instance of a gentleman who had an irreducible omental hernia. As the neck of the sac was constantly kept open by the protruded omentum, he was liable, on any exertion, to have a portion of intestine descend; the intestine was then subject to pressure; at those times great pain was experienced by the patient, who became sick, and was obliged to go to bed and remain there till the intestine could be returned, suffering very considerably till this object could be accomplished. The patient was a fine young man, just at the active period of life, and he found the inconvenience of this rupture so great, that he was resolved to attempt to get rid of it, and, in fact, an operation was performed. It was found to be an adherent omental hernia, as was anticipated; the adhesions were separated, and some portion of the omentum was removed. Now this gentleman nearly lost his life in consequence of the inflammation that supervened after the operation. It is a proceeding, therefore, only to be adopted very cautiously at the urgent request of the patient, and where there is inconvenience of the most serious kind, in consequence of the irreducible state of the rupture; and, indeed, even under such circumstances it is not to be recommended to the patient—it is only to be performed if he should absolutely require it. Under other circumstances, the patient should content himself with having the tumor supported as much as possible by a suspen-

sory bandage. It does not always happen that a hernia increases to an enormous size, even if no bandage should be worn. I am acquainted with a member of our own profession, who has had a large scrotal hernia for a number of years; it was originally a reducible hernia, but although he could return the parts into the abdomen, so much pain and inconvenience were produced, that he could not bear them when kept up, and was obliged to take the truss off and leave the parts to themselves. Thus the hernia remained down, and though he has been employed since that time in a very active life, and been in the habit of riding about in the country with this scrotal hernia, and it has attained a very considerable magnitude, it does not interfere with his occupations.

The most dangerous condition of a rupture is that of strangulation, or incarceration, which are synonymous terms—that is, where the protruded parts experience such a degree of pressure from the sides of the opening through which they pass out of the cavity of the abdomen, as not merely to confine them in that situation and prevent their return, but to suspend their functions, and to produce inflammation in them, which is propagated to the contents of the abdomen generally, and which in a very short time brings the patient into a condition of great danger. The pressure here, or rather the part which produces the pressure, is technically termed the stricture—the contracted portion of the opening; and this stricture either is produced by the sides of the opening through which the viscera are protruded, or that thickened and hardened state of the sac which I described to you in the last lecture. So far as the pressure is concerned, it is immaterial whether it is produced in one or the other of those ways; indeed the effects of strangulation or incarceration are the same whatever its cause may be. The immediate effects produced by the stricture are on the parts which are surrounded by it; changes are then induced in the protruded viscera below the situation of the stricture, and the effects of the pressure are also propagated in the other direction to the intestine situated above the stricture, and to the other contents of the abdomen. Further, this pressure suspends the functions of the parts that may be protruded; and as those are generally some portion of the alimentary canal, of course a stop is put to the transmission of the alimentary matter. The first or immediate effect of the stricture on the parts which it embraces, is a mechanical impression on them, as if a thread were tied round them; and when they have been subject for a time to the operation of the stricture, the impression remains on them even after they are taken out and put up as a preparation. Here [pointing to it] is a specimen of that kind: this is a portion of the intestine and mesentery; the

part producing the stricture has been taken away, but you see very plainly the mark or indentation which it has left. Here is an example of a case in which the bowel is very much distended above and below the stricture, and reduced at the point where it has been girt round by this band, to the size of a large writing quill. The stricture has been removed, and there is nothing to prevent the parts from resuming their natural situation; but still they remain in that state, appearing, as you see, to be almost cut through.

Now when you see this considerable mechanical effect produced by the pressure of the stricture on the protruded parts, you will not be surprised at finding, where a portion of the intestine is surrounded by a tight ligature of this kind, that the coats undergo ulceration, which sometimes nearly separates the bowel at the point where it is thus compressed. Generally speaking, however, the ulcerative process will go through the internal mucous membrane and the muscular coat, but will not penetrate the serous covering: the serous coat resists the ulcerative process longest, but in some cases an opening will be made even through it. This is a specimen [exhibiting it] in which there is a bit of straw introduced into the ulcerated opening, and it goes completely into the cavity of the abdomen. Here is another, where the serous coat is completely perforated, so that you see an opening of some size into the abdomen, where the stricture has been situated. This is produced by ulceration in an incarcerated hernia, but it is by no means uncommon to find that the internal and middle coats are ulcerated, the serous membrane remaining entire.

If the protruded parts are thus firmly pressed upon, the circulation through the vessels of the parts below the stricture becomes impeded; the vessels become distended, particularly the veins; the coats of the intestine are thickened, and the veins being filled with dark-coloured blood, the whole is very considerably discoloured; the same kind of effect is produced on the protruded parts as would be produced upon the leg or arm, if you tied a ligature round either of them. There is then an impediment to the circulation, a distention of the vessels, a thickening of the coats, and a livid discolouration of the intestine. This discolouration is often very considerable—the bowel assuming a deep chocolate-brown colour, or a dark livid tint, hardly distinguishable from black. When you first see a portion of bowel which has undergone this change in a case of hernia, you are inclined to imagine that it is mortified; but this is merely an appearance produced by the pressure and the interruption of the circulation.

Further effusion takes place from the sur-



face of the protruded parts. Generally a serous, bloody, reddish-coloured fluid, is poured out into the sac; and we meet with such a fluid when we open it in performing the operation for strangulated hernia. Sometimes there is a considerable quantity of this fluid effused—sometimes only a small quantity; and sometimes you meet with hardly any at all. Effusion of coagulating lymph may also be produced from the surface of the bowel and omentum. If the pressure is not sufficient to interrupt the circulation, it may have the effect of exciting inflammation; coagulating lymph will then be effused, and thus the protruded bowel or omentum will become agglutinated to the sac. This adhesion, however, is so slight, that you can separate it with your finger, or with the handle of the scalpel; it is a different kind of adhesion from that which takes place between the sac and the other parts, at the end of a considerable length of time. The effects produced in the cavity of the abdomen are those of inflammation, excited in the parts immediately embraced by the stricture, and propagated by continuity along the surface of the serous membrane generally, where it produces the ordinary effects of peritoneal inflammation. The functions of the protruded part are arrested, so that if any part of the bowels be protruded, costiveness is produced: in consequence of this circumstance the alimentary canal, above the situation of the stricture, becomes greatly distended. No doubt secretions take place from the mucous surface of the canal, in consequence of the irritation excited in it by inflammation; and we find, when we come to examine the bodies of persons who die under such circumstances, that the intestine above the stricture is enormously increased in size, and filled with a fluid matter and flatus, while, on the contrary, that part which is below the stricture is in an equal degree diminished, contracted, and free from inflammation. The interruption of the functions of the bowels and the costiveness are easily explained in cases where the stricture is so considerable as I have just described—where the bowel is firmly embraced, and its sides brought into contact by the stricture; but these symptoms are also observed under other circumstances.

There are some instances of very small herniæ, where only a portion of the diameter of the intestine is included in the stricture, so that there would be a passage still left for the contents of the alimentary canal; yet in those instances there is costiveness, and the functions of the canal are interrupted. There are also instances of strangulated omental herniæ, where no bowel is protruded, and where the consequences are the same as where the hernia consists of intestine. So that the suspension of the functions of the alimentary canal, and the costiveness, are

not to be ascribed merely to the mechanical state of the stricture, but to the inflammation of the protruded parts, and of those in the cavity of the abdomen.

From these effects of the stricture, you will easily see what the symptoms must be which are found in a case of strangulated hernia. Costiveness, which does not yield to the exhibition even of the most active aperient medicines—sickness, either nausea or actual vomiting; and when the strangulation lasts for a considerable time, it appears that the contents of the bowels pass in an unnatural direction—the peristaltic motion of the bowels is inverted, and their contents are ejected from the mouth—not simply those of the stomach, but a matter is ejected which is considered to be faecal, and this is called stercoraceous vomiting. It is doubtful whether actual fæces are ever ejected in this way, but at all events the contents of the small intestines, consisting of a liquid substance, tinged with bile, are certainly thrown up in the protracted state of strangulated hernia. There is pain in the swelling; first tenderness on pressure, then considerable pain. This pain is most considerable at the neck of the sac, just where the parts are embraced by the stricture; but gradually extends over the whole abdomen, in consequence of inflammation passing to it from the stricture; distention of the abdomen takes place, and, indeed, all the symptoms that belong to a case of peritonitis. The abdomen feels firm and tense, as well as painful. There is a quick, but at the same time small and hard pulse, a white and dry tongue, sense of extreme weakness, coldness of the extremities, and thirst. These are the chief symptoms that are observed in cases of strangulated hernia.

Now, all cases of strangulated hernia do not present exactly the same assemblage, or the same intensity of symptoms; there is a considerable variety. You sometimes have the symptoms coming on very rapidly, arising quickly to a high pitch, and changes of a very serious nature taking place in the parts within a short time. In other instances, the symptoms come on almost insensibly; they proceed very slowly, and the strangulation exists for a considerable length of time without the occurrence of any serious or marked alteration in the parts. The inflammation, therefore, which occurs in cases of strangulated hernia, may, as in other cases, be either acute or chronic. If a hernia forms suddenly, in a young and robust person, from some accidental circumstance, the progress of the case will be very acute; the tumor, from its commencement, is exceedingly painful; pain and tension come on in the abdomen, and the local changes go on very rapidly: within a few hours the intestine frequently becomes discoloured, and if it be not liberated, mortification

will speedily ensue. In other instances, where a hernia has existed for a considerable time in elderly persons, more particularly if it be a large hernia, the symptoms of strangulation come on very slowly. In the first instance, perhaps, obstruction takes place in the bowels, and gives rise to the state of strangulation of the intestine. The symptoms are rather referable to the obstruction in the passage of the contents of the alimentary canal than to pressure and inflammation excited by it; and several days will go on without their assuming a very formidable character. The pain in the tumor is not very considerable—there is little pain and no tension in the abdomen; and thus, at the end of many days, the state of the patient may be less dangerous than that of another after the expiration of but a few hours. I once operated on a gentleman in the evening, in whom the hernia had become strangulated in the morning of the same day. He was a young man of full habit: the symptoms were very violent—there was intense pain all over the abdomen; the tumor contained intestine only, which was of so dark a colour that I think an inexperienced person would have said it was mortified. In the case of an old woman now in the hospital, the operation was performed at the end of 36 hours after the strangulation had taken place; yet the intestine was by no means much altered in colour, and the symptoms were not very violent. In a case of acute strangulation, the mischief consists of acute inflammation of the tumor, produced by the pressure of the stricture, immediately on the protruded parts, and spreading over the abdomen. In the case of chronic strangulation, the symptoms are mostly referable to obstruction in the alimentary canal, induced in some measure by the stricture—to a confined state of the bowels, the gradual accumulation of their contents, and the inconvenience arising from that circumstance.

*Means to be adopted before operating.*

The first object in the treatment of strangulated hernia is, of course, to replace the parts that are pressed upon by the stricture—to return the protruded viscera into the cavity of the abdomen. If you can accomplish this, the danger of the patient is at an end. We naturally try, in the first instance, to return the protruded parts by pressure with the hand; and this process is called, in books, the operation of the *taxis*. When we perform this, in the case of a hernia which is either strangulated or on the point of becoming so, we of course place the patient in such a position, and proceed in such a manner, as will give us all possible advantages in respect to the return of the parts. We place the patient in the horizontal position; for the contents of a rupture in a reducible state, will return when

the body is in the horizontal position. It is of advantage to have the pelvis a little elevated, and the trunk of the body slightly incurvated, so that the abdominal muscles may be relaxed; and in those ruptures that pass out at the inguinal canal we relax the muscles of the pelvis, so as to diminish the tension of the opening through which the parts are protruded. Then, being at the side of the patient, we embrace the tumor with one hand, and subject it to a general pressure, employing the finger and thumb of the other hand at the neck of the tumor, in such a way as, if possible, to get the parts into the abdomen. We press the tumor gently, varying the direction of the pressure according to circumstances, bearing in mind, in each instance, the course which the protruded parts must have taken, and giving our pressure a direction accommodated to the course of the rupture. In doing this, it is necessary to proceed gently—not to grasp the parts violently, nor to push them with much force, nor to squeeze them against the bony parts of the parietes through which the protrusion has taken place; for, by so doing, we should add to the mischief, and probably fail to accomplish our object. We should proceed with particular caution where the symptoms of strangulation have actually come on. To say the truth, the return of the parts by the *taxis*, as it is called, is more applicable to that state of a rupture which immediately precedes incarceration, than to the state of incarceration itself. When the parts become inflamed, and the inflammation is spreading to the abdomen, we have little chance of returning them by this pressure; but in the state which exists just before this, we may accomplish that object. Any thing like force, any thing like continued efforts, after the parts have become inflamed, must, for evident reasons, be exceedingly injudicious. No doubt a great deal of mischief is done by attempts of this kind, and by their injudicious repetition, as well as by the repeated trials made by the different persons when they are called in consultation upon a case of this kind. No good whatever can result from three, four, or five persons trying to return the hernia; indeed, the thing is so simple, that whatever can be done in that way may be done by one person; and if he does not succeed, supposing the attempt to be judiciously made, there can be no good object answered by any other person making it. Desault was so impressed with the prejudicial effects of pressure upon a strangulated hernia, that he entirely prohibited all such attempts in the Hôtel Dieu. When, therefore, a person was brought in with strangulated hernia, he confided entirely in other means; he would not allow any pressure whatever to be made until the inflammation was completely over-

come and the parts brought into a situation in which they would almost return of themselves. I merely mention this, not with a view that you should abstain altogether from attempts of that kind, but to satisfy you that the prejudicial effects must have been very great to have induced so great a surgeon as Desault to lay down such a rule. If you cannot gain your object, then, by the taxis, you must endeavour to reduce the inflammation; and if you can accomplish that, there will be little further difficulty; if you can bring the parts which are subject to pressure into a natural state—if you can relieve them from the injurious effects of the stricture—the hernia will be easily reduced.

The first measure that is naturally resorted to in a case of this kind, is the abstraction of blood; and a patient with strangulated hernia may, in general, be safely bled to some extent. We cannot assert that bleeding is proper in every case; but it is usually a proper measure, and it is to be employed, unless there should be some contra-indicating symptom. The danger of a patient with strangulated hernia is from inflammation; the danger of failure in the operation, if it comes to be performed, is from inflammation; and therefore the loss of blood in the early period of the strangulation cannot be otherwise than beneficial. A rupture may often be returned after the patient has been bled, more particularly if the bleeding produces syncope. The warm-bath is also a powerful remedy; it should be as warm as the patient can well bear it; you should keep him there for some time, till it produces a state approaching to faintness, when the hernia can often be then returned. The application of cold to the tumor, which reduces the bulk of the protruded parts, and diminishes inflammation in them, is also a very proper measure to be employed. It may be used after a person has gone into the warm-bath. If this has not been successful, ice may be applied to the tumor, pounded, put into a bladder, and laid upon the parts; or you may employ ice-water at  $32^{\circ}$ ; or you may employ (if you have no ice) a freezing mixture made with salt and water. These are, perhaps, the three most important measures—the loss of blood, the warm-bath, and the application of cold to the swelling.

There is another powerful measure which has been much confided in—and that is, the employment of tobacco in the form of injection. Sometimes tobacco-smoke has been thrown up by means of an apparatus for that purpose, something like a pair of bellows, with a clyster-pipe at the end of it, and a contrivance for the burning of the tobacco. This, however, is uncertain in its operation; and, therefore, when tobacco is employed now, it is used in the form of injection—a drachm of tobacco to a pint of boiling water; and half that quantity is to be thrown up, and if it does not produce its peculiar effects

on the system, which consist in a great diminution of the force of the heart's action, and in a general relaxation of the powers of the system—if those effects are not produced within a quarter of an hour or twenty minutes, the other half may be injected. During the state of diminished arterial action, and depressed nervous energy, which tobacco causes when employed in this way, strangulated hernia is often returned. You must be aware, however, that this is a very powerful agent on the system, and that its employment is attended with some degree of risk. Instances have been known in which the tobacco-injection seemed to have proved fatal; therefore it must be employed with great caution; and, indeed, in consequence of the violence of its operation, I think it is now, and perhaps judiciously, much less frequently employed than the means I have already mentioned; although there is no doubt that, in many instances, the influence of tobacco on the system has produced the return of the hernia, when the operation seemed almost inevitable.

The costiveness which prevails at the commencement, and throughout the strangulation, has naturally led to the exhibition of purgative medicines; but it is obvious that these are not suitable when strangulation is fully formed. When inflammation within the cavity of the abdomen has taken place—when vomiting is excited by whatever is received into the stomach—when the alimentary canal above the stricture is distended and filled with liquids and flatus—you cannot expect to benefit a patient by the additional irritation which the exhibition of purgative medicines produces; they are, therefore, only to be used in the very commencement, where you may expect to produce a return of the protruded parts by an active aperient; and more particularly in cases of chronic strangulation. In the case of an old rupture, where the symptoms of strangulation come on slowly, and where there is reason to suppose that obstruction in the alimentary canal is the primary cause of the mischief, a brisk purgative will sometimes accomplish the purpose we wish. Under such circumstances, calomel and jalap, or calomel and colocynth, are suitable purgatives.

In failure of the means that I have now described to you, we must have recourse to the operation. The state of a patient with a strangulated hernia, is one of very urgent and imminent danger. You must employ, therefore, at once means of an active kind, and when they fail you must lose no time in resorting to the only mode of relieving the patient that remains—the performance of the operation. There is no case in which inert treatment and injudicious delay are more prejudicial than in that of strangulated hernia. You must, of course, reflect beforehand on the means you may find it necessary to adopt. On this account you should be pre-



pared to employ measures of the most active kind as quickly as possible; and if they fail to produce the desired effect, then you must lose no more time, but resort to the operation. If active means have failed, you cannot expect that any benefit will result by waiting to see if any good effect will be produced from their repetition, or from the employment of less active measures; and the state of a patient with strangulated hernia is never stationary—it is always getting worse; therefore the longer you delay the operation, the more is the chance of recovery diminished. A great proportion of the operations for strangulated herniæ do well when they are performed early, and a great proportion of them turn out unfavourably when they are delayed. Heretofore it used to be the practice to go through a round of all the means that could be devised for the reduction of strangulated hernia, before proceeding to the operation; and cases of rupture then turned out very badly. It is now the practice, on the contrary, to use active means at once, and when they fail, to proceed immediately to the operation; and there is, proportionately, a favourable change in the results of the operations. For my own part, I should say that I have many times seen the operation performed too late, and that I do not know that it has ever come within my observation to see a case that I should say was operated on too soon.

#### *Inguinal Hernia.*

Inguinal hernia, or, as it is technically called, bubonocoele, takes place through the opening in the abdomen, which transmits the spermatic cord in the male, and the round ligament in the female. The parts which are protruded in this way form a tumor in the groin, and if that tumor increases, it descends into the scrotum of the male and into the labium pudendi in the female, in which latter case it is called, in the male, scrotal hernia. Inguinal and scrotal herniæ, therefore, are so far the same that a scrotal hernia has been an inguinal hernia originally; it is merely an inguinal hernia extending lower down into the scrotum.

In a case of inguinal hernia, the parts are protruded through the same opening, but they are not protruded in all cases in the same manner. In the majority of instances they pass over the spermatic cord and along the whole course of the canal, and therefore they take precisely the same course which the spermatic cord does. The spermatic cord goes out of the abdomen, not in a straight but in an oblique direction. It first passes out nearly midway between the anterior superior spine of the ilium and the symphysis pubis; it then runs obliquely between certain portions of the abdominal muscles, and passes out over the pubes at the ring, in the external oblique muscle. Thus

it is directed obliquely from above downwards and forwards; and the greater number of inguinal hernia pursue this course, that is, the parts are first protruded in the space midway between the bony parts I have just mentioned; they run between the muscles, and then come out of the ring in the external oblique muscle. The neck or upper part of the sac is oblique, passing in the same course with the spermatic cord through the inguinal canal; and the hernia, in that case, following precisely the course of the cord, is protruded on the outer side of the epigastric artery, so that this artery is situated on the inner side of the sac. This kind of rupture is called *external* inguinal hernia, the parts being protruded on the outside of the epigastric artery. This is a specimen of a rupture of that kind [shewing it], and here is the epigastric artery running along the inner edge of the mouth of the sac.

The neck of the sac of a hernia of this kind is just as long as the inguinal canal; for it is the part embraced between the abdominal muscles, and lying in the space that intervenes between the upper and the lower openings of the inguinal canal. That is the state of the parts when the rupture is first formed; but after it has lasted for some time, the gradual weight and pressure of the protruded parts bring the upper portion of the hernia in a line with the lower, so that after a certain time the neck of the sac loses its obliquity, and that which was the neck is nearly at the bottom. As the parts in this case are protruded immediately over the spermatic vessels, they pass between the cremaster muscle and those vessels, and beneath that covering which the tunica vaginalis gives to the cord and the spermatic vessels. The peritoneal sac, therefore, is covered externally by the cremaster muscle, and by the tunica vaginalis communis. In this form of rupture, then, you have, in addition to the usual coverings, an external and thickened covering, made by the tunica vaginalis communis and the cremaster muscle. [Mr. Lawrence here showed a dried preparation of the parts.]

The hernia comes directly over the spermatic cord, which is thus generally situated at the back of it. In old herniæ the pressure separates the constituent parts of the cord, and the swelling insinuates itself between them, so that you may have the vessels and nerves on one side, and the vas deferens on the other. [The Lecturer here exhibited various preparations.] Here is a specimen of that sort; here is specimen of another case, where you see all the parts separated; but in a small hernia the spermatic cord is situated along the middle of the back part of the hernia.

This, then, is the course which the hernia takes in the more common species, which, as I have mentioned, is called *external* inguinal hernia, in consequence of the contents

of the abdomen being protruded outside the epigastric artery. There is another kind of inguinal hernia which does not come through the inguinal canal, but is forced directly out through the external ring, on the inner side of the epigastric artery, so that in this case the artery is situated on the outside of the hernial sac: this is called an *internal* inguinal hernia. Now in this case, in which the hernia comes out directly through the external ring, the neck of the sac is not at all oblique, even at the very commencement; the opening is directly and immediately into the cavity of the abdomen, and there is not that long oblique neck which is observed in the case I have just described to you. Hence those two kinds of hernia have been called by Sir Astley Cooper, *oblique* and *direct* inguinal hernia. The latter kind is much less frequent than the former. I do not know the exact proportion; some have said in the proportion of one to five: but I rather think the direct inguinal herniæ are not so numerous—perhaps they do not occur more than in the proportion of one to ten, or even fifteen. In this case the hernial sac is situated on the outside of the spermatic cord, and not covered by the cremaster muscle or tunica vaginalis.

There is another modification of the external or oblique inguinal hernia; you may have the parts protruded at the superior or internal aperture of the inguinal canal forming a tumor, but not coming out at the external ring; there the hernial tumor is contained within the inguinal canal. But the parts may not only be protruded and confined in that situation, but they may be pressed upon by the margin of the opening through which they have been protruded, and become strangulated. In this variety of the tumor the hernia is generally very small, and covered externally by the aponeurosis of the external oblique muscle, so that the boundaries of it are not very distinctly defined. If such tumors are pressed much, they may pass out of the external ring and become common external inguinal herniæ. The specimen which I shewed you before, for the purpose of satisfying you that herniæ may take place without producing an external tumor, was of that kind. If I do not mistake, this was taken from a patient who died in consequence of the existence of the hernia not being ascertained during life from the smallness of the swelling, though a careful inquiry was made, and careful examinations instituted, in the various situations of herniæ, in order to see whether there was any such protrusion. This preparation points out to you the necessity of a cautious examination of all those parts through which herniæ may protrude, in cases where persons labour under such symptoms as may be produced by strangulated intestine; you must not

merely ask a patient whether any tumor exists, but you must actually feel with your own hand, and press in every situation, in order that no small rupture may by possibility escape your observation. There is another kind of caution also to be observed, rather of a contrary kind to this, in cases of hernia; that is, you must be aware that inflammation of the bowels or inflammation of the cavity of the abdomen may take place in a patient who has hernia, and the state of that individual may present to you a puzzling combination of circumstances, in which you find it difficult to determine, whether the hernia is the cause of the symptoms which the patient labours under, or whether the symptoms are not independent of it. You may have affections of that kind occurring in an individual with a rupture, just as they might occur in a person without a rupture; but when such symptoms exist—where you have costiveness and inflammation of the bowels, the first impression on your mind will be, that the rupture is the cause of the symptoms; yet it is not necessarily so. In order to determine this point, it is requisite to attend very carefully to the origin and state of the tumor; to see whether the symptoms commenced in it and extended to the abdomen, or whether they commenced in the abdomen, the tumor remaining free from pain, tension, and the other conditions which belong to strangulation. The state of the tumor when you make the examination, and the point at which the symptoms commenced, are the two circumstances which will probably guide you in determining the question in instances of this kind.

#### LECTURE LXXXIV.

*Recapitulation—Inguinal Hernia—Operation. —Treatment of Cases where the Intestine is mortified—Artificial Anus—M. Dupuytren's Method of Treatment—Congenital Hernia.*

I began to speak in the last lecture of inguinal hernia or bubonocoele; I observed that there were two varieties of that rupture, one in which the parts were protruded through the inguinal canal, entering at the superior or internal, and making their appearance at the inferior or external opening, namely, that in the tendon of the external oblique muscle, first appearing as a tumor in the groin, and then gradually extending into the scrotum. I mentioned that it was called *external* inguinal hernia in consequence of its being protruded on the outer side of the epigastric artery; that the parts were protruded directly over the spermatic cord, between it and the cremaster muscle, and that the peritoneal sac received an external cover-

ing from the cremaster and the tunica vaginalis communis. I stated to you that it was also called oblique inguinal hernia, in consequence of its having, particularly in the commencement, an oblique direction from below upwards and outwards. I stated that there was another kind of this rupture in which the parts were first protruded at the superior or internal aperture of the inguinal canal, and did not pass out at the inferior aperture, and that they might even be strangulated in this situation; that in that case the hernia was, of course, situated in the groin, and was covered by the external oblique. [Mr. Lawrence exhibited a specimen of a rupture of that kind, in which, however, a portion of the tumor was situated in the way mentioned, in the inguinal canal between the superior aperture and lower opening of that canal, and another portion had passed through the inferior opening and descended into the labium pudendi.] I mentioned to you that in the other variety of inguinal hernia the parts were protruded directly through the external ring; that they passed out of the abdomen on the inner side of the epigastric artery, so that the artery was seated on the external side of the mouth of the sac, and that this was called internal, or direct inguinal hernia, inasmuch as the parts come out in a straight course. Now, in the latter case, that is, in the direct or internal inguinal hernia, which is the least common of the two kinds, the hernia never obtains a considerable magnitude, for it pushes before it and is covered by the fascia transversalis, and thus it cannot increase to any great extent.

Now these differences are important in reference to certain anatomical points, and more particularly in executing particular parts of the operation.

The proper place for the application of the pad of a truss in a reducible inguinal hernia, is the part at which the viscera are first protruded from the abdomen. In the case, therefore, of the most common species, that is, the external or oblique inguinal hernia, the situation for the pad of the truss in the incipient state of the complaint is midway between the angle of the pubes and the anterior superior spine of the ilium, where the viscera are first protruded. In the case of direct or internal inguinal hernia, the pad must come immediately over the ring of the obliquus externus, that is, immediately above the angle of the pubes. But in either case you have to ascertain, by pressure with your hand, the exact place where the viscera protrude, and that is the point to which the pad of the truss is to be applied. In taking the measure of a patient for a truss, you have to measure from the point at which the parts are protruded in a circular direction round the body; and a string carried in that way will be proper enough for the measure to be given to an instrument-maker. It will be

well, however, to mark the place where the pad is to press upon the opening (in the one case midway between the anterior superior spine of the ilium, and the angle of the pubes, and in the other above the angle of the pubes) as well as the distance from this point to the anterior superior spine, for that will give the length of the curved part of the truss in front.

#### *Operation for Inguinal Hernia.*

In the operation for strangulated inguinal hernia, you must carry the external incision in the direction of the long axis of the tumor, commencing at about an inch above the opening at which the parts are protruded, and carrying it down in a straight line along the middle of the tumor towards the lower part of it; it is not necessary, however, to extend the incision throughout its whole length. That part where you principally want room, is just where the parts have been protruded from the abdomen; therefore begin, at all events, at about an inch above that, and then carry your incision downwards in the long axis of the tumor through the skin. With an ordinary pair of forceps and scalpel, you then carefully cut through the adipose substance which intervenes between the surface of the sac and integuments. In the external inguinal ring you have to cut through the skin, adipose texture and coverings, which are often thin and separated into several laminæ, composed of the cremaster muscle and tunica vaginalis of the cord. You cut through them cautiously, stratum by stratum, until you come to the sac, and when you are approaching it, you must cut with every possible degree of caution, for if you were to cut incautiously through the peritoneal covering, you might wound the intestine. As you approach the sac, you lift up the different layers with a pair of forceps and cut through them, when thus elevated, with a knife, carried nearly horizontally, and in this way there is not much danger of wounding the protruded parts, the hernial sac being separated from them by the fluid effused into it, so that when you cut through the peritoneal covering, a certain quantity of fluid, generally of a reddish colour, escapes; sometimes there is a considerable quantity of this fluid, and usually it is enough to prevent all danger of this kind. When you have thus cut into the sac, you extend the opening upwards and downwards, so as to expose the parts freely. It is not necessary to cut through the integuments and the sac the whole length of the hernia. I pointed out to you in the last lecture, that the component parts of the spermatic cord are sometimes separated in the case of hernia, and that sometimes either the vas deferens, or some other parts of the cord, pass directly over the sac, so that if you were in every instance to cut down to the very bot-



tom of the tumor, you might endanger the cord, or the vas deferens. Such a complete division of the tumor is not necessary; if you expose the sac for a space of two or three inches, including the ring and the part just below it, that will answer every purpose. When you have completely exposed the contents of the sac, you introduce the finger and ascertain where the stricture is situated that confines the parts and prevents their return; your next object is to make such a division of that stricture as to allow of the replacement of the protruded parts. There is some difficulty in accomplishing this part of the operation. Unless the parts were very closely girt by the stricture, you would be able to return them without opening the sac, and of course the hernia would not then be strangulated. You will expect, therefore, where you cannot accomplish this, to find the stricture so complete, that you cannot introduce even the extremity of your finger; therefore you must divide it with a cutting instrument conveyed in by means of a director; and as the situation of the stricture is generally deeper than the external wound you have made, and perhaps higher up, you have got to divide the stricture at a part where you cannot see it, and where your proceedings must be guided by your anatomical knowledge. Recollect that intestine, and perhaps omentum also, are contained within the stricture, and that there may be only just sufficient room for the passage of the director, and yet that you have got to introduce a cutting instrument on that director, and at the same time take care that you do not wound the parts where it is thus introduced. In doing this part of the operation considerable danger exists, and a good deal of care and management are necessary, even although you have operated repeatedly, in order to enable you to avoid it. I think that a person will hardly find, even after long experience, that he can perform this part of the operation without feeling it necessary to adopt all possible precaution to prevent the intestine from being wounded, the part to be operated on embracing the protruded viscera very closely, and being completely out of sight. You introduce, then, a director under the stricture, and, in order to avoid as much as possible the danger I have mentioned, you will find it expedient to employ a director such as this, [shewing it] with a deeper groove than that which you ordinarily find in a dressing case of instruments: a steel director, with a very deep groove is to be introduced; it passes easily into the stricture, and the depth of the groove conceals the blade of the knife which you employ; so that there is very little risk of wounding the parts, if you operate cautiously; at the same time you must employ the fore-finger of your

left hand, or the finger of an assistant, who, with his finger on the handle of a scalpel, presses the intestine out of the way of the knife when you are executing this part of the operation; and this, I think, you will find the best way of proceeding. A particular kind of curved knife has been recommended by Sir Astley Cooper for performing this part of the operation. Of course you are aware, that under circumstances where you have not got a proper instrument to divide the stricture in incarcerated hernia, you may accomplish this with a probe and the common curved bistoury, but this instrument, which I now show you, is calculated to perform what you want more safely; it appears like an ordinary curved knife, but it is blunt for half an inch at the point; then there is a cutting edge for about three-quarters of an inch, and the rest is blunt. You carry this knife into the part flat, then you turn up the cutting edge against the stricture, and cautiously divide it. It is an instrument that may be conveniently employed in this part of the operation.

It is not necessary to make an extensive division in strangulated hernia; all you want is such an opening as will allow you to replace in the abdomen the parts that have been protruded and confined by the stricture. A division, perhaps of a quarter of an inch, will enable you to accomplish the purpose, and if it will it is not necessary to divide more than that. The further you divide the parts in the operation, the more they are loosened, and the greater probability is there of a return of the hernia after the operation, and of its acquiring a considerable magnitude: by limiting the division just to the extent absolutely necessary, you avoid that risk. You will, therefore, introduce the knife, keeping the edge of it closely applied against the part that constitutes the stricture, and cautiously divide a little of that part. When you have made a small division, attempt to return the parts, and if you find that the opening is not adequate to their return, you must repeat the incision, making the division a little larger.

In the case of inguinal hernia, you may find the stricture either in the tendon of the external oblique, or it may be formed at the superior and internal abdominal ring, by the lower edge of the internal oblique and transversalis; or by the neck of the sac, altered in the way that I have already described. If it is formed in the two ways I have last mentioned, either by the edge of the obliquus internus and transversalis, or by the altered neck of the sac, you may find that it will be situated considerably within the parts you have divided, and that you have to introduce your finger and divide it at a considerable depth.

The only other point of consequence to attend to, in the case of inguinal hernia, is

the direction to be given to the instrument in performing this part of the operation. And here you must recollect the distinction I have made between the two kinds of rupture; in the more common species, the epigastric artery will be situated on the inside, while, in the less frequent kind, it is situated on the outside of the neck of the hernial sac. In the case of external inguinal hernia, you might safely divide the stricture upwards and outwards—that is, towards the anterior superior spine of the ileum; but in the other species, if you were to divide the stricture in that direction, you would run a great risk of wounding the artery; if you were to divide it upwards and inwards—that is, towards the *linea alba*, in the ordinary kind of inguinal hernia—then also would you endanger the artery. In order, then, to avoid all risk of this occurrence, you should divide the stricture directly upwards—that is, in a line parallel to the *linea alba*—and the artery will then be perfectly safe, whatever kind of inguinal hernia you may be operating upon. You are not to cut upwards and outwards, nor upwards and inwards, but divide the stricture in the middle, in a direction parallel to the *linea alba*—that is, straight upwards—and then there is no danger in either kind of inguinal hernia, so far as the epigastric artery is concerned. Having divided the stricture, you make gentle pressure on the protruded parts, and you find that they immediately re-enter the cavity of the abdomen; the intestine passes into the abdomen with the greatest facility, and you can easily return the omentum also, when that is protruded.

Sometimes you find the intestine very much discoloured. You find it of a deep livid red—a dark-brownish red, or of a deep chocolate-brown colour; or it may even be of a livid tint hardly distinguishable from black; and all these discolorations may exist without any serious change in the state of the coats of the intestine, that is, without loss of vitality in them. Under such circumstances, the peritoneal covering retains its ordinary smoothness and polish; and if the vessels are filled with blood, by making a gentle pressure on them, in the direction of the venous circulation, you can squeeze on the blood, and the vessels will again become filled, showing that the vitality still exists. If the parts should have become mortified, they have a dirty brownish hue, and the peritoneal covering will be found to have lost its polish; and there is generally this distinction between mortified parts and those that are not mortified, that in the former case, if you squeeze the blood out of the vessels, then they do not fill again, so as to show that the circulation goes on; and usually when this serious change has taken place there is more or less of that disagreeable fetid smell, which comes on when mortification has super-

vened. A portion of intestine simply changed in colour, however considerable that change may be, may be safely returned into the abdomen; but if it has actually lost its vitality, it would be very improper to replace it, because it would eventually become separated, the contents of the alimentary canal would escape into the abdomen, and the patient would lose his life. If the intestine has lost its vitality, you may make a free incision through it; by so doing you allow the alimentary canal to unload itself: you let out the faeces and flatus which fill it above the stricture, and thus you give great relief to the patient.

With respect to the omentum, if that is in its natural state—if it possesses its natural redness and softness of texture, you may replace it in the abdomen. Frequently, however, the omentum has become considerably thickened and indurated—formed into an irregular mass, which you cannot easily unfold, so as to make it exhibit its natural state, the neck being especially condensed and formed into a pretty firm thick ring. If a piece of omentum in this state were returned into the abdomen, you would find it become a source of irritation;—the parts would inflame, suppuration would be produced in the abdomen, and the returned omentum would thus become the cause of great danger to the patient. To avoid this, after returning the intestine, you must cut off the piece of omentum that is thus situated; and having done so, take up the vessels one by one, and tie with small ligatures any that you may observe to bleed. Sometimes the omentum has been left in the sac: under such circumstances it will occasionally separate, after the performance of the operation; or the part that has been thus left, will become covered with granulations, and form a portion of the cicatrix. I think it best, however, if much altered, either by long continuance in the hernia, or by the change occasioned by the strangulation, to cut it off, and take up any bleeding vessels that you may find troublesome.

Having thus disposed of the parts contained in the sac, you bring together the sides of the wound in the usual way, and you generally find it better to unite them by sutures. The situation of the wound is not convenient for union by adhesion, but the edges may be brought carefully together and united by sutures. Then the most advantageous dressing is soft cloths dipped in cold water; or, perhaps, immediately over the wound you may lay a rag spread with simple cerate. In some instances, particularly if the opening into the abdomen be large, and the parts protruded are bulky, there may be such a tendency in them to escape again, that you require some pressure to be made in the situation of the ab-

dominal ring; in this case, after uniting the wound by sutures, you may employ compresses of rag over the opening, and produce as much pressure there as may be found necessary to prevent a return of the hernia; it is expedient also to direct the patient, whenever he moves in bed, or has occasion to use the bed-pan, to put his hand over the part and make slight pressure, for the purpose of preventing any protrusion under such exertion.

I have spoken to you of the means that should be adopted in cases where you find the intestine mortified; the same course may be adopted if the changes in the hernia, visible externally, previous to the operation, are such as to lead you to expect that mortification has occurred. If the integuments have become red externally, if the violent symptoms have subsided, and the pulse has become small, feeble, and intermittent, and at the same time the patient is covered with a clammy sweat, you may expect to find that the parts protruded have undergone mortification, though, on the other hand, this change may have taken place where these symptoms have not exhibited themselves before the operation. The parts may be mortified, although there be no appearance of it externally, and although there may be no particular alteration in the pulse; but it is always a very formidable sign when you see a redness, and more particularly, a livid state of the integuments. As long as the protruded viscera remain in their natural state you never have the integuments inflamed, and therefore when you see the parts covering the hernia thus discoloured, you may be sure that not only are the protruded parts pretty considerably inflamed, but that they have undergone mortification. Under such circumstances you may deem it necessary to make an opening, and perhaps give the patient that relief which a free division of the mortified parts will afford: that is all you can do in such a state of danger.

#### *Artificial Anus.*

Now, in many cases it is found that the mortified part of the intestine separates, and that the contents of the alimentary canal are freely discharged through the opening that is made either in this way or by the surgeon. After a time the discharge of the feces through the wound diminishes, and the patient has fecal evacuations in the natural way; and in certain instances the discharge through the wound ceases entirely, the contents of the alimentary canal take their natural course, the wound closes up, and complete recovery ensues. In other instances the patient recovers his strength, but the wound does not close; the contents of the bowels are permanently discharged through the wound, and, in fact, the case then becomes what is technically called

*artificial anus*,—a case in which the fecal matter is discharged at the groin, or any other situation where the hernia has existed. This, of course, is a state extremely annoying to the individual, and which it would be very desirable to remove. In some instances an operation has been performed which has had the effect of relieving the patient from this disgusting infirmity, by producing a closure of the artificial opening, and procuring a passage for the feculent matter in the natural direction. At first sight it would seem rather difficult to understand how the natural passage of the contents of the bowels could be restored after a portion of intestine had mortified; but by examining the circumstances attending cases in which this has taken place, the process which nature adopts becomes tolerably obvious. If a portion only of the diameter of the intestine be included in the stricture, we find that part of the mesentery corresponding to the portion included in the stricture, to be drawn down towards the inguinal canal; and if a third of the diameter of the intestine be included in the stricture, the passage of the alimentary matter is completely impeded, because the internal and muscular coats form a prominent fold on the inside of the intestine, opposite the part where the mesentery is drawn down. [Mr. Lawrence here illustrated the formation of artificial anus by a diagram. We beg leave to refer our readers to the very interesting paper by M. Dupuytren, in our second volume, where will be found an excellent lithographic plate in illustration.]

Now, in certain cases, the process we find to take place is this: the inflammation that has proceeded to such an extent as to produce mortification, produces also adhesion between the sides of the bowel and the parts in its immediate vicinity. After the stricture has been relieved, and the bowels have been emptied, the mesentery and portion of the intestine which had been protruded are gradually drawn back into the abdomen, with the portion of the sac adherent to the bowel, which thus supplies the place of the part which has been lost. In this manner the integrity of the alimentary canal is re-established.

This circumstance is pointed out by Scarpa, who observing the portion of the hernial sac that is drawn in by the gradual retirement or recession of the intestine, to have a funnel-like shape, calls this the membranous funnel, and points out how the alimentary substances coming down through this membranous funnel-shaped cavity, pass on into the lower part of the intestinal canal. There are some instances, however, in which the two portions of the bowel become situated very nearly parallel to each other, and where this process of reparation cannot take place. But if you could remove a certain portion



of the septum that separates the two, you would then have the contents coming down from the upper portion into the lower; and the same process would take place as where the ends of the bowel, instead of being parallel, are united by an acute angle. Now this object has been accomplished by a very ingenious operation, devised and practised in a great many cases by Baron Dupuytren, and I think that it does great credit to the ingenuity of the inventor. In the first place, he ascertained by examination that the cause which prevented the passage of the contents of the bowels from the superior to the inferior part of the canal, consisted in the projection of the coats of the bowel between the two openings, and considering what process could be employed to destroy that projecting part, he hit upon employing a kind of forceps the parts of which admit of being separated. One blade is introduced into the upper part of the bowel, and the other into the lower, and then a certain portion of the coats of the upper and lower ends of the intestine—where they are united at an acute angle—is embraced between the two ends of the forceps, which are so constructed as to produce pressure upon the parts thus embraced, sufficient to destroy their vitality. When the parts have inflamed, and have separated in the ordinary way, the portion thus pressed becomes loose and is removed, and a free communication is established between the upper and lower ends of the bowel. Now that is the operation which has been performed for the removal of artificial anus by Baron Dupuytren. I have not had an opportunity of trying it myself, for to say the truth, I do not find those cases of artificial anus to be very numerous, and all cases in which they exist do not admit of its performance. It is necessary that the two portions of bowel should either be united at a very acute angle or lie parallel to each other, to allow of this operation, and I have not met with a case in which the parts were thus situated. I would therefore beg to recommend you, if you have a case of this kind to operate on, to consult the account Baron Dupuytren has lately published of this operation, in a new French Medical Dictionary, entitled *Dictionnaire de Médecine et Chirurgie*, in the third volume of which, under the word *Anus*, is the article to which I beg to refer you\*.

In the case of artificial anus, where there is a regular discharge of the contents of the alimentary canal through the opening, it sometimes happens that the intestine prolapses at that part;—the same kind of prolapsus takes place that may occur at the

natural anus, and which constitutes prolapsus ani. It is everted in the same manner as the finger of a glove may be; and you may have a large portion of it descending even to the extent of some inches. You may have a double prolapsus; one at the superior and one at the inferior edge of the intestine. Such a protrusion may be easily returned, but it is difficult to keep it replaced.

After an opening of this kind has been closed, or at least after it has been so far closed that the contents of the bowels pass in their natural channel, it sometimes happens that a minute opening remains, through which there is an occasional discharge of a little yellow fetid fluid; this has been called a faecal fistula, and is sometimes found extremely difficult to heal.

Inguinal hernia in the female is essentially the same affection, and the operation for it is the same as in the male; I have, therefore, nothing particular to add to what I have already said. In considering the operation however, as performed in the female, for inguinal hernia, where the intestine descends through the upper or internal opening of the canal, and is strangulated there, without passing through the external ring, it is so far peculiar, that if you were to operate in such a case, you would have merely to make an opening through the external oblique muscle; as to the rest, it is the same as in the other case.

There is a case in which the protruded parts are found in contact with the testicle, and this is called *congenital hernia*. It takes place thus: the communication between the tunica vaginalis and cavity of the abdomen, which exists immediately after the testicle has descended into the scrotum, does not become closed in such cases, but remains permanently open, and the tunica vaginalis is, in fact, a kind of process or continuation of the cavity of the abdomen. Now in individuals in whom this process of peritoneum, leading from the inguinal canal down to the testis, has not become closed, if a hernia takes place the parts will pass through that opening, and come into contact with the testicle. The term *congenital* would lead you to suppose that it existed at birth, which, however, is not the fact; the hernia does not take place till some time after birth, perhaps not till the patient is some years of age; but the state of parts which produces it exists at birth, although the hernia itself does not then take place. When you come to lay open the sac, you find that the parts lie in contact with the testicle; and, of course, previously to the operation, you do not find the testicle situated free and below the protruded parts, as in the case of ordinary inguinal hernia. [The Lecturer exhibited a specimen of a case of this kind, with the sac laid open,

\* The papers alluded to, with diagrams, will be found in the Medical Gazette, Vol. II.

and the testicle projecting into the lower part of it.]

The remark which I have made to you respecting the distinction between hernia congenita and common inguinal hernia, in respect to your not being able to feel the testis separate from the rupture, reminds me that I did not, in the commencement of the lecture, as I should have done, mention to you the particular symptoms and diagnosis of inguinal hernia.

I began by speaking of the operation, without having mentioned what the symptoms are by which you are best able to distinguish inguinal hernia from other affections which take place about the same parts. When a tumor exists in the anterior part of the inguinal region, or when you see a tumor in the scrotum which has previously existed in the groin, and descended into the scrotum; when you find, on examining that tumor, that you trace it up to the ring, and that it passes into it; when you find that the testis is situated below it, and quite free, and that the spermatic cord is situated along the middle of its posterior part, and can also be pretty freely felt; when you find in such a tumor, that the circumstances exist which I have mentioned as the general symptoms of hernia—namely, that the tumor disappears under pressure, or when the patient is in the horizontal position, and reappears when he is in the erect posture, or when the pressure is removed—that it increases on coughing, or when the individual holds in his breath, then you may be satisfied that the case is one of inguinal hernia, or bubonocoele.

There are, however, various other complaints attended with swelling, occurring in the same situation, from which it is necessary you should be able to distinguish the tumor formed by an inguinal hernia, and in certain instances the distinction is by no means easy. In the first place, there is hydrocele. The tumor formed by this is, however, generally very different from that of inguinal rupture; there is hardly any probability of confounding the two. Hydrocele commences from below and ascends—a rupture commences above and descends. The surface of a hydrocele is smooth and uniform; the sense of fluctuation—the obvious existence of fluid—form a complete distinction between the two. The tumor of hydrocele distinctly terminates, and is bounded at the upper part, while the tumor of hernia is not so bounded, but is continued into the abdominal ring. There are some instances, however, in which the tumor of hydrocele ascends along the front of the spermatic cord, and even passes into the ring, so that the mere limit of the tumor above is not a sufficient distinction; and indeed you will often find it advantageous to do what I recommended to you before,

namely, examine the tumor with a candle, when the transparency of the fluid will be immediately perceptible, if it be hydrocele.

Varicocele is a swelling of the spermatic cord, which may be confounded with hernia. The tumor of varicocele is made up by congeries of distended and enlarged veins, but the feeling of this when it exists is so peculiar that it hardly admits of being confounded with hernia. There is, however, this confusion between the two, that a varicocele like a hernia recedes in a great measure when the patient lies down, because the veins then become empty, and the tumor returns when the patient is erect; but, on the one hand, the tumor will not return on coughing so long as the patient is recumbent, and, on the other, it will be reproduced when he stands up, even though the abdominal ring be closed with the fingers; the difference, however, of feeling between the two, is sufficient to enable you to distinguish them. You should also be aware of the irregularities that take place in the descent of the testicles. The tumor thus produced might be mistaken for a hernia, because it is sometimes attended with pain; you should therefore examine the scrotum carefully, in order to ascertain whether both testes have descended or not.

An encysted tumor of the spermatic cord might be confounded with hernia; it is, however, very rare, and is so distinct that it hardly admits of being confounded with a hernial tumor.

#### LECTURE LXXXV.

##### *Treatment of Hernia after the Operation—Femoral Hernia—Umbilical Hernia—Ventral Hernia.*

AFTER performing the operation for strangulated hernia you must have the patient put to bed, and wait for a certain time, in order to see whether the removal of the obstruction will lead to an evacuation of the alimentary canal. You wait, perhaps, two, three, or four hours for this purpose; and inasmuch as patients, before the operation is performed, have frequently taken a considerable quantity of active purgative medicines, it will not uncommonly happen that the bowels will be freely relieved without the administration of any other aperient. If, however, in the course of three or four hours after the operation, no evacuation should take place, it will be proper to administer opening medicines, for of course it is a matter of the first importance to get the alimentary canal unloaded, especially that part which is situated above the stricture, and which, in fatal cases, we often find to be extremely distended and greatly loaded. For this purpose the best mode of proceeding is to administer some mild aperient in moderate doses,

repeated at short intervals until the desired effect is produced. Sulphate of magnesia in drachm doses, dissolved in distilled water, mint-water, or some vehicle of that kind, will answer the purpose very well; and such a dose may be administered every hour until the bowels are relieved. If the patient should be sick, if what he takes is speedily rejected from the stomach, you may add a few drops of tincture of opium to it. You may find it necessary to administer medicine of a more active kind; under such circumstances calomel, with the extract of colocynth, forms a proper combination. You may give the sulphate of magnesia in the form of an effervescing draught; that is, you may dissolve the carbonate of potassa in the infusion of senna, you may put the required dose of the sulphate of magnesia in the mixture, and take that while the effervescence is produced by adding a little lemon juice to it. That is a form which agrees well with the stomach when it is irritable. You may also advantageously relieve the alimentary canal in these cases, by means of injections, particularly if sickness be produced by the medicines; you may throw up a common injection, or one of gruel, containing a certain quantity of the infusion of senna, and thus promote the action of the bowels. It is an object of urgent importance to get the alimentary canal freely evacuated, and you should not be satisfied on this point till you have produced several free evacuations; you cannot until then deem the patient out of danger, and, generally speaking, you will find those cases do best where they are speedily induced. You will be surprised in some instances to see the quantity of matter that is discharged from the bowels after the operation for strangulated hernia. About a year ago I operated on an old lady who had a large strangulated umbilical hernia; the abdomen was immensely distended, and when the stricture was divided, and the protruded parts returned into the abdomen, she felt a desire to have a motion before we had completely finished the operation; however, we were obliged to get out of the room as soon as we could, to give the old lady an opportunity of emptying her bowels; and when I called to see her next day, I found the people in a state of perfect astonishment at the quantity of matter that had been passed. They said that about two chamber-pots full had been evacuated; I myself saw a very considerable portion; and in this instance there were evacuations in the same prodigious quantities for several successive days. It was a case where, from the age and corpulency of the female, and the size of the rupture, I did not venture to entertain an expectation of a favourable result, but the case turned out remarkably well; no unpleasant symptoms occurred afterwards, and I attributed the successful event chiefly to the manner in which the

bowels had been unloaded after the operation.

The great danger to the patient after this operation is in the occurrence of inflammation of the peritoneum. The truth is, that in many instances, at the time you perform it, this membrane is already inflamed; the pressure of the stricture on the protruded bowel has produced inflammation of that part, and this has extended to the rest of the abdominal cavity; the distention of the alimentary canal above the seat of the stricture has added to that inflammation; previous to the operation you have had pain, tension, together with other circumstances, obviously indicating the existence of inflammation in the serous membrane of the abdomen, and the operation itself in which you make an incision through the peritoneum must be expected to aggravate this inflammation. You may, therefore, reasonably expect that active inflammation of the serous membrane—peritonitis, will follow the operation for strangulated hernia. You will find that pain arises in the situation of the wound, extends over the abdomen, which becomes tense, that the patient has a quick, hard, and small pulse; that there will be sickness, and the general symptoms which indicate peritoneal inflammation.

For such symptoms you must, of course, immediately adopt an antiphlogistic treatment. Although the pulse may be small, you must bleed freely from the arm, and you will find that it will become stronger and fuller after the depletion, which you must repeat if the symptoms should continue. You may find it necessary, after you have bled freely from the arm, to put a large quantity of leeches, perhaps three, four, or five dozen, over the surface of the abdomen, so as to cause a considerable loss of blood. These are the measures you must have recourse to, where the symptoms indicate the existence of inflammation of the peritoneum; at the same time you may freely administer calomel, which will be advantageous by its operation as a purgative, and which will have the further advantage of checking in some measure directly the progress of the inflammation. After this operation, patients may frequently have pain in the abdomen without the occurrence of any other symptoms indicating inflammation there. It is not, therefore, in all instances in which the patient feels pain of the abdomen, that you will find it necessary to have recourse to the active depletion which I have now mentioned. If the bowels should have been evacuated, and the abdomen should not be tense, it may be sufficient to use fomentations, which, under such circumstances, often afford great relief.

When the wound is healed, and when you consider the patient to have recovered from the effects of the operation, you must apply



a truss before you allow him to go about and resume his ordinary occupations. The effect of the operation is not to produce a radical cure; on the contrary, the opening through which the parts were protruded is necessarily enlarged, in order to allow of their being returned. There is a greater probability, therefore, that the protrusion will recur after the operation, and in order to obviate this, you must have a truss applied before the patient gets up.

In the instances where mortification has taken place,—where, as I have already described to you, the contents of the bowels are discharged in the situation of the hernia, you must assist in the progress of recovery, where nature seems to make an effort for restoring the natural course of the alimentary matters, by the administration of mild aperient medicine in the form of clysters. When all symptoms of an inflammatory kind have disappeared, more particularly if there seems to be any disposition to the discharge of the contents of the bowels by the anus, you should administer clysters daily, in order to aid that disposition; and you will find, under such circumstances, that the contents of the bowels will be determined towards the rectum, and will come in smaller quantity through the wound.

#### *Femoral Hernia.*

When the protrusion takes place under the crural arch, the hernial tumor presents itself at the anterior part of the bend of the thigh, and this is called crural, or femoral hernia. In this case the bowels are protruded under the inferior edge of the tendon of the obliquus externus, which is called the crural arch. [Mr. Lawrence here demonstrated the parts on a dried preparation.] The portion which is here represented is a kind of ligament extending from the anterior superior spine of the ilium to the angle of the pubes. Under this, the psoas magnus and iliacus internus muscles, and the femoral vessels, pass from the pelvis to the thigh, so that this large space which appears empty in the dried specimen of the pelvis which you now see, is almost completely filled up by the parts which I have just mentioned. There is, however, a small opening left between the femoral vein and the edge of the ligament which constitutes this arch, near the angle of the pubes; and it is just at the lower or anterior part through the space, which you observe left open in this specimen, that the protrusion occurs which is called femoral or crural rupture. In this preparation you see the precise situation very clearly pointed out. This is the anterior part of the pubes; here are the two recti-abdominis muscles; this is the crural arch, and these are the femoral vessels under it; now just on the inner side of the vein there is a small sac—the sac of a femoral hernia; it is

between the femoral vein and the bend of the tendon that constitutes this arch. This is the situation in which we always find the mouth of the sac in crural hernia. Although when you look at the dried pelvis, there seems so large a space that you might fancy the viscera would be protruded in almost any situation here, you find when you come to examine the parts in the recent state, that all the rest of the space is so filled up that there is no opportunity afforded for protrusion, except at the particular spot I have just mentioned, and, in fact, I have never seen it in any other situation. The tendon at this part forms a very thin sharp margin, extending from the angle of the pubes along the ridge of bone for the space of about half or three-quarters of an inch, and that thin sharp portion has been sometimes called Gimbernat's ligament; therefore the mouth of the sac is situated between the femoral vein on the outside, and this thin edge of Gimbernat's ligament on the inside. These are the lateral boundaries of the mouth of the sac; behind, it is bounded by the portion of bone on which it lies, the horizontal branch of the pubes. The space that is left in this situation for the protrusion of the viscera is very small, so that the neck of the sac in femoral hernia is generally small also. The spermatic cord, in the male subject, runs directly over the mouth of the sac; it is situated obliquely above it, while the epigastric artery takes its course along the outer side. This [pointing to it] is the artery in this specimen, and you observe that it lies at the neck of the sac, in the same situation in which it is seen in direct inguinal hernia, namely, at the outer side of it. The spermatic cord runs in the inguinal canal over the mouth of the sac, and is covered by the obliquus externus. The cord lies above, but very near to the crural arch, and if you were to cut through this, you would immediately come to it. This specimen contains intestine, as well as a portion of reflected omentum. This is the hernia as you see it externally: on looking on the inside, you observe the mouth of the sac and the artery running close to its outer side.

The viscera are protruded in the situation which I have just mentioned, on the inner side of the femoral vein, and under the edge of the crural arch; they push before them a dense cellular covering, which is found in that situation, and which thus forms a covering to the sac. It is a thick and very regular investment, completely enclosing the sac, and was first pointed out and named by Sir Astley Cooper in his work on Hernia, where he called it the *fascia propria*. When you come to dissect a tumor of this kind, you meet with a smooth dense covering, which you might suppose to be the hernial sac containing the viscera; but you find, on cutting through it, that these are not exposed, and that, in fact, you have still to cut

through the proper peritoneal sac, after having divided this covering. [Mr. Lawrence showed a specimen exhibiting these coverings: the peritoneal sac was seen turned back and pushed towards the cavity of the abdomen, while the fascia propria was left in the situation it had occupied during life.]

The swelling of a femoral hernia is situated at the lower and anterior part of the bend of the thigh. As the protrusion takes place under the crural arch, you might perhaps expect to find the tumor there; but you will remember, that the parts on being pushed down in that direction, cannot descend towards the thigh, the movements of which naturally tend to throw them upwards towards the abdomen. The tumor, therefore, instead of being situated below the crural arch, lies in front of it, and is situated higher up on the abdomen than you would expect to find it. The thigh and the prominence of the abdomen, both of them prevent the tumor from extending either downwards or upwards, so that it can only extend in the direction of the bend of the thigh. Thus it generally assumes an oblong shape, the long axis being parallel to the bend of the thigh; and inasmuch as the cellular membrane in this situation is dense, and resists the increase of the tumor, it is usually small in size. This [exhibiting a preparation] represents to you the kind of elongated shape which the femoral hernia generally assumes; it is here somewhat of an oval form, and the long axis corresponds to the bend of the thigh.

It really is sometimes difficult to distinguish whether a tumor in this situation be a crural or an inguinal hernia, more particularly in females, where there is a good deal of fat surrounding the swelling, and where the bony prominences which might indicate the exact anatomy of the parts, are concealed by the same cause. You find it necessary to draw the tumor downwards towards the thigh in making your examination, and then, perhaps, you can trace the course of the crural arch above its neck. If the tumor does not admit of being thus drawn down, you will probably see reason to consider it as an inguinal rupture; but in many instances, the distinction is by no means so easy as you would suppose, especially in females. The position of the crural arch, and the power of tracing the edge of the tendon from the anterior superior spine of the ilium down to the pubes, and the relation it bears to the sac, are the points of principal importance in forming your diagnosis.

Femoral hernia, I should observe to you, occurs much more frequently in the female than in the male. The surface between the spine of the ilium and the angle of the pubes is considerably larger in the former than in the latter; the transverse measurement of the pelvis is more considerable; there is,

therefore, more space for the parts to be protruded through, and thus femoral hernia is more common in the female, while inguinal hernia occurs more frequently in the male, for the opening through which the spermatic cord descends is necessarily larger than that through which the round ligament of the uterus passes in the female. Crural rupture may, however, occur in the male as well as in the female; I am only speaking to you now of the comparative frequency of the two kinds of rupture in either sex.

The tumor is generally small in the case of crural hernia, not larger than that which would be produced by an enlargement of an absorbent gland of the groin. The situation therefore, the size of the tumor, and even the apparent consistence of it, are in the two cases almost exactly alike; and really a very considerable difficulty is occasionally experienced in forming a satisfactory diagnosis; this difficulty may be more particularly experienced, where it becomes a question, whether the contents of the rupture are strangulated or not. I have seen more than one instance where a surgeon, and one of considerable experience, has mistaken a strangulated femoral hernia for an inflamed and enlarged gland, and has from such a mistake neglected to perform the operation. In a case where ambiguity exists, you should of course examine very minutely into the symptoms; inquire how long the swelling has existed; the circumstances under which it formed, and so forth; you should also inquire minutely into the state of the patient's health previously, more particularly as regarded the performance of the functions of the alimentary canal, and you will generally find that a careful attention to these points will enable you to determine pretty clearly whether the swelling be a rupture, or depend on inflammation of the glands. But supposing the circumstances to be so obscure that you cannot make up your mind as to the nature of the case, it will at all events be safest to make an incision, to cut down and find out the nature of the tumor; because if it be a glandular swelling, the incision cannot be productive of much inconvenience, while neglecting to perform the operation would probably be fatal, if the tumor turned out to be a hernia. The truss for a femoral hernia is nearly similar in its shape and form to that which is used for inguinal hernia; the openings to be compressed in the two cases being very near to each other.

In the operation for strangulated femoral hernia, the principal difficulty experienced arises from the smallness of the opening through which the viscera are protruded, and the consequent tightness of the stricture to be divided. In the case of inguinal hernia, the aperture through which the viscera are protruded admits of considerable en-

largement, so that frequently three fingers can be introduced into the inguinal canal, but the sides of the opening through which the femoral hernia comes, do not admit of a similar enlargement. The space is very small, and as it is bounded by the bone on the one side, and unyielding tendon for two-thirds of its space on the other, it is always very narrow, and generally surrounds the protruded parts so closely, that even a director cannot be introduced into it; sometimes you can only pass in the end of a probe, and you find that the parts appear to be as tightly confined as if you had tied a pack-thread firmly round them. Indeed, the thin edge of Gimbernat's ligament presses so strongly on the hernia, that not uncommonly it makes one of those deep impressions which I have already described, and which leads to ulceration of the internal and middle, and sometimes even of the peritoneal coat of the intestine.

The stricture in femoral hernia is generally, if not always, produced by the thin sharp edge of Gimbernat's ligament; it is therefore found on the inner side of the sac; and there the division is to be made. This is most effectually accomplished by carrying the bistoury inwards in a direction parallel to the bone; that is, by passing a director on the inside of the protruded parts, and cutting directly towards the pubes. The difficulty which is experienced in doing this, arises partly from the very close way in which the stricture embraces the protruded viscera, and partly from the depth at which the stricture is seated—so that you have to divide it in a part that is quite out of sight. You must trust entirely to your feeling; you cannot see the operation you are performing, and you will therefore have the intestine carefully held aside by an assistant, and perhaps have the handle of a knife placed against it, so as to prevent all possibility of wounding it by the curved bistoury which you introduce. I showed you in the last lecture, that the knife is to be introduced under the stricture far enough to bring the cutting edge against the tendon, which is to be cut very carefully, the fibres of it being successively divided. A very small division, perhaps a quarter of an inch, will be sufficient in this case to liberate the parts, and to allow of their return into the abdomen; and the stricture may be divided in this way without at all endangering even the main portion of the crural arch: you may divide as much as a quarter of an inch without at all separating the attachment of the arch to the pubes. I have one or two preparations here [pointing to them] in which the stricture has been divided in the operation.

The situation of the spermatic cord, which lies directly over the mouth of the sac, in front, renders it expedient not to divide

the stricture directly upwards, if you are operating on the male subject; but the same objection does not exist in females. The position of the epigastric artery on the outer side of the mouth of the sac, renders it of course quite out of the question to think of dividing the stricture upwards and outwards, that is, towards the superior spine of the ilium; the only course, therefore, which remains to be taken, is to divide the internal portion of the stricture, carrying the division close to the bone, and in a direction towards the pubes. Even this mode of dividing a stricture is not, however, safe in all cases, for it happens, not uncommonly, that the obturator artery arises from the epigastric; and in such a case this artery might run along the inner side of the sac, the neck of which would thus be surrounded, on its outer, upper, and inner sides, by a large arterial trunk, and perhaps it would be hardly possible to escape dividing an artery, in whatever direction the incision was made; but, fortunately, in those cases in which the obturator artery arises from the epigastric, it usually runs on the outer side of the sac. Here is an example of that kind; here is the sac [showing it]; this is a common trunk, giving rise to the epigastric and to the obturator, both of which run on the outer side of the sac, so that the latter would not be endangered by dividing the stricture parallel to the bone. If the obturator had run along the inside of the sac, you would then have had the neck of it inclosed, except where it lies on the bone, by a large artery; and perhaps it would have been impossible to have escaped dividing one of them under such circumstances.

The only circumstances peculiar to the operation for strangulated femoral hernia are, this closeness of the stricture, the depth at which the stricture is situated from the surface, and the consequent difficulty attending its division; in other respects there is no material difference between the operation for femoral and that for any other strangulated hernia.

I should perhaps have mentioned, with respect to the external incision, that you do not cut, in this case, in the direction of the long axis of the tumor, which lies parallel to the crural arch; but you cut nearly perpendicularly, bringing the incision just over the situation in which the parts are protruded from the abdomen, and cutting perpendicularly over the swelling. Sometimes it is necessary to make the incision in the form of the letter T reversed, making the perpendicular incision in the upper part, and transverse one nearly in the direction of the long axis of the tumor. After making the incisions, you would turn up the two angles that are formed, to get free access to the parts where you were to divide the stricture.



*Umbilical hernia* takes place through that opening in the linea alba which the umbilical vessels passed through in the fetus; it is a circular opening, and the orifice of the sac, therefore, is of a round shape. The parts come out directly from the cavity of the abdomen, and the form of the rupture is very simple. In order to repress it, you apply a bandage that encircles the body in the horizontal direction; a bandage of that simple kind will keep the parts, if reducible, in their natural place.

Umbilical hernia is not uncommon in young subjects. Some of the viscera often protrude through the opening in the linea alba soon after birth; and from that time to the age of three or four years, it is by no means uncommon to see children with a protrusion at the navel. Sometimes this protrusion acquires a large size, and parents are of course anxious to have some means adopted for its removal. I believe it is best in these cases to be content with such means as will keep the parts in their natural situation by external pressure, and not to adopt any of the measures that have been proposed with a view to what is called the radical cure. In children, where the regular application of a bandage surrounding the body is very irksome and inconvenient, sufficient pressure can usually be made without completely surrounding the trunk. If you have some firm body placed over the opening, such as a piece of cork, or of ivory, cut so as to correspond with the opening in the linea alba, and if you confine it in that situation, after the protruded parts have been returned, by means of sticking-plaster, you will generally be able to retain them in their natural situation. If you can accomplish this for a short time, the opening in the linea alba will contract, and a radical cure will be effected. In cases of this kind, it was recommended by Desault to return the parts into the abdomen, and then to surround, with a ligature, that portion of skin which constituted the external tumor, and which contained the sac. This ligature was drawn tolerably tight, and it was gradually tightened in proportion as the parts yielded to its action, so that at last the hernial sac, and the integuments which covered it, went into a state of mortification, and the opening was closed by the inflammation excited in that portion of the peritoneum. In many instances this operation was performed by Desault with impunity; but inasmuch as it involves considerable pressure, applied not only to the integuments but to the serous membrane forming the hernial sac, we cannot consider it a proceeding that can be adopted indiscriminately with perfect safety. We should not be surprised if such a mode of proceeding should excite considerable inflammation, and if that inflam-

mation should spread to the contents of the abdomen generally. If, therefore, the other mode of proceeding—that of external pressure—will accomplish the purpose, I think it a much safer mode of treatment than the operation in question, which I believe is now hardly ever practised.

In cases of strangulated umbilical hernia, the operation is very simple: you have to make a division along the middle of the tumor, to expose its contents, and to divide the stricture, so as to enable you to return the protruded parts. The incision may be made in the direction most convenient; there are no vessels, nor any other parts of importance, concerned; so that you may divide the stricture directly upwards or downwards, or to either side. In general it is most convenient to divide it upwards, for the parts extend downwards, so that the opening through which they are protruded is generally found near the upper part of the tumor. Often, when the swelling in umbilical hernia is of considerable magnitude, and when you might suppose that the communication with the abdomen was in the centre of it, you will find that it is situated very near the upper part. In most cases, therefore, it is convenient to make the division directly upwards.

When a protrusion takes place in any other part of the linea alba than at the umbilicus, it is called a *ventral hernia*. This [presenting it] is a specimen of a hernial tumor in the linea alba, but not at the navel; it forms a small round tumor—a ventral hernia. The same name is given to ruptures that take place in other parts of the abdomen. Should a protrusion take place at the linea semilunaris, or in any other part of the abdomen, after a wound, it is called ventral hernia.

Such protrusions very seldom become strangulated, and it is very uncommon to find it necessary to proceed to the operation in the case of ventral hernia.

There are some other kinds of rupture occasionally observed, but they are very rare, and many of them hardly distinguishable in the living subject. A protrusion has taken place at the aperture of the foramen ovale, through which the obturator vessels pass out. A protrusion has been known to take place through the ischiatic notch. A protrusion may take place through the diaphragm—through some division of the fibres of the diaphragm, or through the natural openings in it. There are other instances in which parts of the bowels have been strangulated by some unnatural formation of the various folds of the peritoneum within the cavity of the abdomen, surrounding the bowels in various directions. Now all these occurrences, although they come under the name of hernia, hardly admit of being recognized during the life of the patient, and

therefore I need not make any particular observations with regard to them.

[Mr. Lawrence said he hoped that, before the next lecture, a subject might be procured, so as to admit of his shewing some of the operations.]

### LECTURE LXXXVI.

#### *Operation of tying the Femoral Artery for Aneurism—Ligature of the External Iliac—of the Carotid.*

I SHALL now proceed to point out to you the manner in which we perform the operation of tying the femoral artery in the case of popliteal aneurism—or aneurism situated in the lower part of the femoral artery, before it assumes the name of popliteal.

The most advantageous situation for performing the operation is in the upper third of the thigh. The femoral artery under the crural arch, is very nearly in the middle, between the anterior superior spine of the ilium and the angle of the pubes, but nearer to the latter point by about a finger's breadth. Here, [shewing a preparation], in consequence of the mode in which the vessels are detached and displaced, the artery is rather drawn out of its proper situation, so that it is nearer to the spine of the ilium than it ought to be. At the point I have mentioned you will find that the artery may be exposed by making an incision in its course downwards. In order to find the artery in any part of its passage along the thigh, take the middle point between the anterior superior spine of the ilium, and go a finger's breadth nearer the pubes; then supposing the foot to be turned outwards, a line drawn down the limb from this point to the posterior and inner part of the knee will pretty accurately shew the course of the artery to where it goes through the biceps into the ham. In the situation I have spoken of, the artery lies on the inner side of the sartorius muscle; you take it up, therefore, before it passes behind that muscle. After making a division about two or three inches in length through the skin, you find very speedily that you come upon a few fibres of the inner edge of the sartorius, and that will direct you pretty accurately down to the artery.

[Mr. Lawrence then performed the several stages of the operation, making the following observations.]

This is the sartorius muscle which is here exposed; then, close along its inner side, we find the artery in connexion with the vein, and a small branch or two of the femoral nerve. The mode of passing the ligature under the vessel I have already described, there-

fore I need not say any thing more upon that point. You find that the artery and the vein are here pretty closely connected—that they are inclosed in a kind of common sheath; and when you come down to the artery, which you easily distinguish in the living subject by the pulsation, you just scratch through the sheath so as to make a little opening, by which you can introduce the extremity of the aneurism needle, and then you may pass it under the vessel with very great ease. This is the situation in which the femoral artery is most advantageously tied for popliteal or femoral aneurism. [The Lecturer then pointed out the inner edge of the sartorius, and the artery itself freed from the parts connected with it.]

I shall tie the artery in the situation where I have passed the ligature under it, and take the portion out, that you may see the mode in which a ligature of this kind divides the internal and middle coats of the vessel. Now here you observe distinctly that the internal tunics are completely divided.

The same mode may be followed in tying the artery under circumstances where it may be necessary to do the operation in any portion of the anterior part of the limb, as far down as the part where it goes through the triceps; but in the case of aneurism in the ham, or about the point where the artery goes through the tendon of the triceps, the most eligible situation for performing the operation is that which I have now pointed out.

#### *Operation of tying the External Iliac.*

In the case of aneurism situated high up in the trunk of the femoral artery—so high that there is no room left between the origin of the profunda and the aneurismal sac for the application of the ligature; or high up above the bifurcation into the superficial femoral and profunda—it becomes necessary to tie the trunk of the external iliac, the main artery of the lower extremity, before it passes out of the pelvis. In this case you tie the trunk of the external iliac artery behind the crural arch, where it lies on the surface of the psoas magnus muscle. Now in order to do this, it is obviously necessary that the external incision should not only pass through the skin and adipose membrane, but should also divide the muscular parietes of the abdomen. You first cut through the skin and adipose membrane so as to expose the tendon of the obliquus externus; you then divide that tendon, so as to expose the inferior margin of the obliquus internus and transversalis, and then you pass your finger under the edge of these muscles, and under the inferior portion of the peritoneum which lines them. In that situation the peritoneum is connected with the parietes of the abdomen and the vessels

by very loose cellular membrane, which readily gives way, and can be easily lacerated or separated, so that you can pass your finger through it, and come directly upon the iliac vessels where they lie on the surface of the *psaos magnus*; you then push the peritoneum aside, and take up the vessel where it lies, in point of fact, behind the cavity of the abdomen.

There are two modes of making the external incision in this case; you may either cut in a perpendicular direction, just as if you had prolonged this incision which I have made below, carrying it parallel to the course of the iliac artery, or you may cut in a direction parallel to the crural arch.

In performing this operation, especially if the subject be rather fat, you have to take up the artery at a considerable depth from the surface—you have to put your finger in to a considerable depth till you come to the artery, feel it, and detach it from the surrounding parts, guided only by your sensation, as you cannot see the artery: when you come to apply the ligature, therefore, you want space, particularly in the transverse direction—that is, at right angles to the course of the vessel. For this reason I consider it better to make the external incision parallel to the crural arch, than in the direction of the artery; it gives you greater room for executing a part of the operation in which more space is wanted. The operation, however, may be performed without very great difficulty in either way; indeed I have myself, in different instances, performed it in both these methods, and found it easy by either of them to accomplish the purpose in view. Now, when I mention to you that the artery is seated deep from the surface, I do not mean to say that it is seated at such a depth as to make the operation one of a very formidable or difficult kind. If you feel in your own persons, you will find that by pressure on the parietes of the abdomen you can distinctly detect the pulsation; and in the individual on whom you are to operate you will generally, by pressing firmly in the situation of the artery, be able distinctly to perceive its pulsation; it cannot, therefore, be a matter of any very great difficulty to cut down upon and secure it in that situation.

One point which requires attention is, to avoid wounding the peritoneum. This you may easily do, for, as I have already said, the peritoneum is connected only by a very loose cellular membrane to the walls of the abdomen, in the region in which the operation is performed; so that by introducing the finger you can easily detach it and push it aside. You do not want to use a knife to cut in any part in the immediate neighbourhood of the peritoneum, and when you come very close to it, after dividing the integuments and muscles of the abdomen, you find that

the separation of the artery from its surrounding connexions may be easily accomplished by the finger, therefore you are not obliged to use a cutting instrument in the immediate neighbourhood of the peritoneum; but you may find—and I remember the circumstance occurred to myself the first time I performed the operation—that the viscera of the abdomen, covered by the peritoneum, are pushed out of the wound in the exertions which the patient makes, which would certainly in some measure embarrass you at first. It happened to myself only when I carried the incision parallel to the course of the vessel, and never where I made it parallel to the crural arch; so that this is perhaps an additional reason in favour of the latter mode of proceeding.

The incision may be made either straight or in a somewhat semilunar direction, with the convexity towards the thigh. This is the first step of the operation, and of course by it you expose the aponeurosis of the obliquus externus, which must next be cut through nearly to the same extent. I have now cut through the integuments and the aponeurosis of the external oblique, and this is the lower edge of the internal oblique. The rest of the operation consists in carrying the finger under this edge, dividing the cellular membrane slightly, and then we very quickly get at the artery. This part of the operation is easier in operating on the living subject than on the dead, because you find the current of blood flowing through the iliac artery, when you come to put your finger upon it. I should observe to you, that you had better not attempt to take up the artery very close to the crural arch, because, although it is a little nearer the surface there, you come immediately upon the origin of the epigastric and circumflexa ili arteries; they arise immediately behind the crural arch, so that you had better go about an inch above it; that is a convenient situation, and in several respects, for there is no vessel going off from the artery, either above or below that part, for a considerable distance; at all events you ought to go high enough to be completely clear of the circumflexa ili and epigastric. This is an important caution, for it happened to a very distinguished surgeon and anatomist in London, who performed the operation I am now showing you, that he tied the artery so close to the crural arch that the ligature was found to include about half of the epigastric artery, so that no coagulum was formed, and the patient was lost, in consequence of hæmorrhage.

[Mr. Lawrence then proceeded to demonstrate the parts.] I now pass the aneurism needle under the external iliac artery; and you see that it is much more convenient to have the external incision at right angles with the artery than parallel to it, as you have greater room in performing this part of the operation.



This is the external iliac artery lifted up on the needle; you see it is just on the same line with the incision I made in taking up the femoral.

*Tying the Carotid Artery.*

It may be necessary for you to operate upon the carotid artery, and I shall just cut down upon it to show you the situation in which it may be taken up. I should observe to you, however, in reference to the external iliac artery, that a difficulty has sometimes been experienced in carrying the ligature round the vessel, in consequence of the depth at which it lies from the external surface. This has a similar difficulty, and may be met with in operating on any other artery situated at a considerable depth from the surface, and surrounded by parts which do not allow of sufficient room for turning an instrument round the vessel; for in order to carry a ligature with this instrument round the artery, of course a certain free space is required. This difficulty has led different persons to construct various instruments for the purpose of carrying a ligature round a deep-seated artery. One of the best instruments of this kind is the aneurismal needle, devised by Mr. Weiss [shewing it]; it consists of three separate pieces—the needle is conveyed in the sheath of an instrument somewhat similar to an ordinary aneurism needle; there is another piece which admits of being taken off, and in which there is a little notch near the end, that fits to a corresponding projection in the handle of the instrument, while the other end, which is curved, is made to clasp the eye of the needle, so that, without seeing the point of the instrument when it is under the artery, you have only to fasten this piece on the handle, and to press it downwards, when it will at once clasp the eye of the needle, as you may observe, and thus the needle may be brought out from under the artery with the ligature attached to it. If you want to detach this moveable part, you may do it by giving it a sharp turn round at the point. You can carry this needle beneath the artery, however deep it lies, for you can direct the point of the instrument under the artery with facility with your finger, without seeing it. The difficulty in those cases is not so much in carrying the needle under the artery, as in bringing it round it, so as to get the ligature out at the opposite side, and this difficulty is in a great measure overcome by the construction of the instrument which I now show you.

There is another aneurism needle, invented by Mr. Bremner, a surgeon with whom I have the pleasure of being acquainted; it consists of a flat silver canula, containing a steel spring, something like a watch-spring, with an eye at the end of it. The ligature is attached to this eye, and carried through

two openings made in the back of the instrument; and when the canula has been passed under the artery, on pushing one end of the thin spring, the other will rise up, curving, from its elasticity, round the vessel, and carrying the ligature with it. By this means a ligature can be carried round an artery situated deeply, and where there would not be space for carrying round the ordinary aneurismal needle. This is an instrument invented by Mr. Bremner; I believe it is not to be found in instrument-makers' shops, but instruments have been made on this principle before. There are other mechanical inventions which answer the same purpose; but I may observe to you, that those contrivances are not very often wanted. Indeed I had an opportunity lately of seeing that the subclavian artery could be easily taken up—that a ligature could be passed under it by means of the ordinary aneurism needle.

In tying the common carotid artery, then, you are guided to the vessel by the edge of the sterno-cleido mastoideus muscle. The artery runs up along the side of the neck, nearly parallel to the trachea, situated at the lower part behind the sterno-cleido mastoideus muscle; but as it passes higher up, it emerges from under the edge of it, so that in general it is easily felt with the finger pulsating in that situation. In the side of the neck you observe a kind of triangular space, one edge of which is formed by the margin of the sterno-cleido mastoideus, another by the trachea, and these two unite at an acute angle; now just at the point where they unite, you will find the trunk of the common carotid artery. If you were operating for an aneurism of the carotid, you might not find it practicable to tie the artery just in the situation I have mentioned; the tumor may be situated low down in the neck, and you may find it necessary to tie the vessel as near as possible to the point where it emerges from the chest. At the edge of the sterno-cleido mastoideus muscle is, however, the simplest and safest part for tying the vessel, if circumstances will allow you to operate there. [Mr. Lawrence then proceeded to operate.] We will suppose that the vessel, in the present instance, is to be taken up rather lower down; the fibres which you see here exposed are those of the sterno cleido-mastoideus; and if you operate in this part, you soon find, on cutting down, that you come across the omohyoideus muscle, which runs along the course of the wound. There is little difficulty in taking up the carotid artery. You will recollect, however, that it is accompanied by two parts of considerable importance—the internal jugular vein, and the nerve of the eighth pair, the pneumo-gastric nerve—that the artery is situated internally and nearest to the trachea; the vein is external, and the nerve between and behind them. In

performing the operation, you will be guided to the exact situation of the artery, when you have somewhat exposed the parts, by the pulsation: in the dead subject we have not this aid. I believe I told you before that you need not be under any great apprehension of hurting an artery in putting a ligature round it, or think it necessary to approach it very cautiously. A large artery is a pretty tough thing, requiring some little force to cut into it. This is the trunk of the common carotid laid bare with the handle of the knife under it; here you see the edge of the sterno-cleido mastoideus, and the omo-hyoideus crossing the course of the vessel rather higher up.

It has appeared to me, that if it were necessary to tie the artery very low down, it might be a good plan to make the incision between the heads of the sterno-cleido mastoideus—between the sternal and clavicular portions; you might come there upon the vessel pretty directly, just where it emerges from the chest. I have now carried the incision through between the sternal and clavicular portions of the muscle, and you see the trunk of the carotid artery immediately where it emerges from the chest, situated precisely opposite to that interval, and just above the edge of the clavicle.

Aneurisms are by no means very uncommon in the trunk of the artery of the upper extremity below the clavicle, or in the axilla; when so situated the only opportunity of curing the disease by performing the ordinary operation of tying the artery between the heart and the tumor, is to take it up above the clavicle, just after it has passed over the first rib. This is the situation for tying the artery for aneurism in the axilla, or immediately below the clavicle.

#### *Tying the Subclavian Artery.*

This is the situation in which the trunk of the artery is to be compressed, when you perform the operation of amputation at the shoulder-joint. You have not the opportunity in performing that operation of applying a tourniquet on the vessel; you must therefore trust to the compression by an assistant of the trunk of the artery, where it passes over the first rib, and where it affords a firm and safe place for compression. By means of your thumb, therefore, or an instrument calculated for the purpose, if you press firmly downwards and inwards, immediately behind the edge of the sterno-cleido mastoideus, you will, without fail, compress the artery against the upper surface of the first rib, and that is the situation in which you have to take up the vessel in the case of aneurism situated as I have mentioned. You will generally find, if you will press in this situation in the living subject,

that you will feel the pulsation, and you may make the experiment in yourselves, and be able to stop the pulsation of the radial artery at the wrist. Supposing the parts to have their natural relations—supposing the clavicle to lie in its proper position, and that there is no swelling of any part about them—there is no very great depth of parts to be divided before you arrive at the trunk of the vessel in this situation; but if the aneurismal tumor be seated nearly upon the clavicle, or if, in consequence of the size of the tumor, the shoulder altogether and clavicle should be elevated by it, the artery may then be situated so deeply that you cannot feel its pulsation, nor by pressure upon it stop the pulsation in the arteries of the limb below, and so deep, that when you come to perform the operation you experience very great difficulty in passing the ligature round it. For this reason it is very desirable, in cases of this kind, to operate early. Indeed, in aneurisms generally, the reasons for operating early are very strong. If the tumor increases in size, particularly in an internal part, as for example, between the clavicle and the chest, it is very likely to interfere with the important organs in its neighbourhood; it presses inwards and produces absorption of the spine; it presses on the nerves of the axillary plexus, and produces great pain and inability to move the limb. No advantage whatever can be derived from allowing the tumor to increase in size. Heretofore it was thought proper to delay the operation, in order that the collateral channels in which the circulation was afterwards to be carried on should become enlarged; but now we know that the collateral circulation is adequate to the support of the various parts below the part where the main artery may have been tied; and if we suddenly tie the trunk where there is no aneurism at all, the parts below will get sufficiently supplied with blood. It is, therefore, totally unnecessary to delay the operation, in order to allow the enlargement of the anastomosing vessels. I have seen a case where an aneurism has been situated below the clavicle, where the operation has been delayed for the reasons I have stated, and where, in consequence of this delay, the patient was in such a state when it was performed, that we could hardly expect success from the operation.

The incision, then, in this case, must be carried parallel with the edges of the clavicle, and about half an inch behind it, towards the edge of the sterno-cleido mastoideus muscle. Sometimes it has been deemed desirable to detach the clavicular portion of the muscle from the bone, but that is not usually necessary. Then you cut down behind the clavicle, and make your way into the cellular substance, to-

wards the surface of the first rib, recollecting that it is situated below the clavicle. A little above the clavicle you have the large cervical nerves, which are descending obliquely into the axilla from the neck, to form the axillary plexus, and lying above the artery. You see distinctly that you come upon the nerves in the course of this dissection; the artery is below them, and here is the natural situation of the parts where the clavicle has not been at all elevated; it is completely above the edge of the clavicle, which does not at all interfere, therefore, with it.

I believe this is all that is necessary for me to point out to you respecting the cutting down and tying of the principal vessels in cases of aneurism. On Monday I shall proceed to speak to you of amputations; and this evening, as I had not the opportunity of showing the operation for cataract on the human subject when I spoke of the disease, and as the eyes here are tolerably fresh, I shall point out the mode of performing the operation on the human eye.

#### *Operation for Cataract.*

In operating on the left eye of the subject, it is most convenient to adopt the inferior section of the cornea—to divide the lower half of it, because you may do that with your right hand. It is necessary that you should have an intelligent assistant who understands the object of the operation, and who knows precisely what to do in elevating the upper lid. He is to lift up the upper lid, and maintain it firmly compressed against the ciliary ridge of the frontal bone, without pressing at all on the globe of the eye, which it is of the greatest importance that he should not even touch, for if he does, the iris may be forced under the edge of the knife, or the lens be forcibly expelled from the eye with the vitreous humour. The assistant, therefore, must gently lift up the lid with the fore-finger of his left hand, put the fore-finger of the right hand against it under the cilia, and keep it thus pressed against the ciliary ridge; this is the point to be attended to by the assistant; but as soon as the operator has made the first incision, he makes a motion to him to let go, and not to continue his compression; for he is not to continue to press till the cornea is divided; he should, therefore, let go before you finish this part of the operation, because in that way you do not run that risk of spasmodic action upon the globe which you would otherwise incur, and by which the lens and vitreous humour are occasionally pushed out. We will suppose an assistant, then, to be at the back of the patient, and keeping the lid steadily pressed against the superior part of the orbit in the way that I have mentioned. Then the operator manages to hold down the lower lid and to steady the globe; he

uses the fore and middle fingers of the left hand for this purpose, making a little pressure on the globe, and steadying it so as just to prevent it from rolling away from the knife when the cornea is pierced. You will recollect that the point of the knife goes in through the cornea on the temporal side of the eye, just at the middle between its upper and lower part, first penetrating through the cornea, so as to reach into the anterior chamber, and then going across it, and coming out at the nasal side opposite to the part where it was carried in. The knife is carried across the anterior chamber in front of the iris, and it is in doing this that the greatest difficulty occurs; the patient rolls the eye inwards unless the globe is well steadied by the fingers of the operator; a spasmodic action takes place of the muscles of the eye, by which the edge of the iris is forced under the knife, and the aqueous humour escapes. When the knife has advanced thus far, the assistant, as I have said, may let go the upper eyelid, and you can complete the action by a motion from side to side. You have now made a flap of the cornea, and you let the patient close his eyelids, so that he may rest for a little time. Then with a curette you puncture the capsule of the lens, let the patient close his eye again for two or three seconds, after which the removal of the lens from the eye is to be effected by the operator alone. You press upon the globe with the scoop part of the curette, or with your fore-finger, pressing on the lower part of the globe with your other fore-finger, and combining the power of those two agents together, until you force out the lens; then when the lens has escaped, the flap of the cornea is replaced in its situation, and the eyelids closed.

Now, in operating upon the right eye, it is more convenient for persons who have not an equal power of using both hands to make the superior section; and this can be done by the operator alone, almost without the interference of an assistant, because the globe is covered almost completely with the upper eyelid; the assistant may hold down the lower lid, just to prevent it from interfering, but almost every thing is done by the operator himself; that is, he both cuts and keeps the lids out of the way; he uses his fore and middle fingers to bear against the front of the eye. This is the position of the knife in performing the superior section. I have carried the point of the knife in on one side, and out on the other, and the cornea is nearly divided; then the laceration of the capsule by the curette, and the removal of the lens, are the same as in the other operation which I have just performed.

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## LECTURE LXXXVII.

*Amputation of the Thigh—of the Leg—of the  
Fingers—of the Wrist—at the Hip-Joint—  
at the Shoulder-Joint.*

I PURPOSE, gentlemen, to shew you this evening the mode of performing some of the more ordinary amputations. There are a variety of points for consideration in speaking of amputations generally. In the first place we should have to consider the circumstances under which amputation is necessary, or those under which it becomes expedient. Now in the former parts of the course, I have had occasion to consider that part of the subject in speaking of gun-shot wounds, compound fractures, and diseases of the joints; I have had occasion to state to you under what circumstances amputation is requisite; and I have therefore at present merely to shew you the mode in which the operation is to be performed.

There are two general methods adopted for the removal of limbs—these are amputations by the *circular incision*, and by the *flap operation*. In the former of these, a circular cut is made through the soft parts, and a subsequent division of the bone, forming a wound in which the soft parts can be brought together evenly—approximated, and placed under circumstances favourable to union by adhesion. In the other case—in the flap operation—there is one, or there may be two, or even more portions of the soft parts divided, not in a circular manner, but in such a way that they admit of being adjusted, fitted to each other, and of course of being placed also in that relative position that would be favourable for union by adhesion. Of these two methods the circular incision is that employed in the great majority of instances.

We have to consider the situation in which the amputation is to be performed as well as the mode of performing it; and, generally speaking, the rule of proceeding is to amputate the limb so as to preserve as much of it as we can; that is, to leave behind as much of the sound portion of the limb as we possibly can. The situation in which amputation is to be performed varies in different instances. Amputation may be either performed on some part of the continuity of a limb, or it may be performed at a joint. We may cut off a limb by making a division at one of the articulations, but the amputation in the continuity of a limb is the proceeding most commonly adopted.

Then, in reference to the performance of the operation on any particular occasion, we have to consider the proceedings that are necessary in order to arrest hæmorrhage during the removal of the limb; the mode of performing it in the quickest and most perfect manner, so far as the immediate effects of the operation are concerned in the mechani-

cal removal of the part; the steps which are subsequently necessary for preventing future hæmorrhage by securing the orifices of the vessels that are divided; the mode of uniting the wound, and the treatment of the patient after the operation has been performed.

I shall, in the first place, shew you the mode of performing amputation by the circular incision; that is the proceeding that is generally adopted in the amputation of the thigh. In this case we always adhere to the rule that I have mentioned to you of taking off the diseased part in such a way as to preserve as much as possible of the sound part; and therefore the direction of the incision in the amputation of the thigh is as near to the knee-joint as we can make it consistently with the purposes of the operation. It is necessary, of course, that the whole of the disease (if it should be disease that requires amputation) should be removed: we must, therefore, perform the incision which is necessary for the removal of the limb completely above the part to which the disease may have extended. But in many cases there is some exception to this rule. Suppose we amputate for disease existing in the knee-joint: in consequence of the disease, abscesses may have formed in the neighbourhood of the joint; these abscesses may have extended to a certain distance along the thigh; they may have reached, perhaps, half up the thigh, or even farther. It is not necessary on that account to make the incision completely above the situation to which such mischief may have reached in such a case; the mere formation of matter in a higher part of the limb is not an objection to amputation in a situation below where the abscess has extended, for inasmuch as you take away the primary disease that has led to the formation of matter, you will find that the change of structure which is consequent on such abscess does not at all interfere with the healing of the wound. You may cut through a sinus, or even through an abscess, without endangering the success of the operation. But if you are removing the limb on account of a cancerous disease, or on account of an affection of the fungoid class (*fungus hæmatodes*)—an affection of a malignant nature—you must be extremely cautious to go completely above the situation of the disease—not only to amputate in the sound part, but to amputate some distance above the part to which the disease may have reached. In the case, then, of the circular amputation of the thigh on account of disease of the knee-joint, or any other affection of the limb, we endeavour to amputate it as near the knee-joint as we can, with attention to the circumstances first enumerated.

The first point, then, is to apply a *tourniquet*, as it is called, to stop the entrance of blood through the main artery, so as to prevent bleed-

ing during the removal of the limb. Bleeding during an operation of this kind may be prevented by tying any circular band round the limb with a certain degree of force; it is not absolutely necessary that you should employ the instrument which surgeons call a tourniquet. If you merely place an ordinary ligature round the limb, and draw it very tight, so as to make compression, it will be sufficient to prevent hemorrhage; but the instrument called a tourniquet is a more safe and convenient mode of commanding the bleeding. In this instrument you have a strong girth which buckles round the limb, with a part which is called the pad, which slides along the girth, so as to admit of its being placed in different situations, according to the size of the limb; and you have a screw, by means of which, after you have buckled this girth round the limb, the pressure can be increased to any extent you please. That is the construction of the tourniquet.

The object in amputation is to divide the soft parts so that they may be conveniently brought together again after amputation has been performed, and so that they shall completely cover the extremity of the bone where you have divided it. Inasmuch as the soft parts are retracted considerably after they have been divided, it is necessary to saw through the bone considerably higher, or nearer to the trunk of the body, than the point at which you divide the soft parts. For this reason it is expedient to have as free a space for the retraction of the muscles after you have divided them as possible; consequently you apply a tourniquet, which exercises considerable pressure on the soft parts of the limb, as far as you conveniently can, above the situation at which the bone is to be divided, so that the muscles, when they are cut through, may have sufficient scope for retraction: for this purpose, in amputation of the thigh, you should put on a tourniquet as near to the bend of the thigh as you can. The pad of the tourniquet is meant to be placed immediately over the artery, so that when the tourniquet is screwed there may be a more particular pressure exerted on that vessel; and it is expedient to have the pad as near as we can opposite to the situation of the screw. You will find it necessary to draw the tourniquet very tightly before you begin to screw it; for otherwise, where the limb is thick, you may find that you have to turn nearly the whole length of the screw, in order to get the requisite degree of pressure. Having applied the instrument in this way, you turn the handle of the tourniquet till you have got it pressed as firmly as you consider will be necessary, in order to prevent the passage of blood through the artery. It is of course necessary that the operator, before he begins to perform the operation, should satisfy himself respecting the position

of the tourniquet, the place on which the pad presses, and the sufficiency of the pressure for arresting the flow of blood.

The first object in proceeding to amputation by circular incision is to divide the integuments and the adipose membrane, by a single cut. Having done that, you retract the divided integuments, you detach them to a certain extent from the muscles which they cover, and then you divide the muscles by a second cut down to the bone: having divided them, you proceed to saw through the bone. Thus there are three steps in the operation—the division of the integument and adipose membrane—a second division, of the muscles—and a third division, of the bone.

After having divided the integuments, you must either have them retracted by the hands of the assistant, or you must detach the adipose membrane which connects the integuments to the muscles, so as to have a sufficiency of integument after the muscles and bone have been divided, completely to cover the parts; for the object is, when the limb has been removed, that the wound should unite as a simple cut, so that you should have it representing simply a straight line. It is not sufficient, therefore, merely to divide the skin and adipose membrane,—it is usually necessary to turn back a certain portion of the skin, so that the muscles may be divided higher in point of situation than the part at which the integument has been divided. This becomes the more necessary in proportion as the limb is thicker or larger at the point where you perform the operation, and also in proportion as the muscles and other soft parts may be more consolidated by the inflammation they have undergone; for in that case, if it were not retracted very considerably, it would gape when you came to press the wound together. You might make it a matter of calculation how long the integuments which are to be retracted or turned back, in order to cover the surface of the stump, should be in each case. If you suppose that the parts are not unyielding, you may measure the circumference of the limb, and supposing that to be twelve inches or one foot, as the diameter of the limb is one-third of the circumference, the diameter in this case will be four inches; consequently, if you come to approximate the integuments from side to side, you must have as much as will cover one-half of the diameter, and therefore you must turn it back for the space of two inches on each side.

Supposing you divide and dissect back the integuments, in order to cover the face of the stump—it is not absolutely necessary to divide the integuments and the adipose membrane at one incision, but you can easily accomplish that purpose, and it appears, perhaps, more dexterous to do it. All you have

to do is to carry the knife round with your hand in the way I now shew you, at the anterior part of the limb, and then you bring it over and cut through the integuments and adipose membrane by a single stroke; but if you do not find that very easy, you may begin on the inside of the limb, carry it round, and then complete the incision in that way.

[The lecturer then proceeded to the performance of the operation, and said]—I begin, then, by making an incision very close upon the knee-joint; for you will recollect, that though I may cut close upon the upper edge of the patella, I shall not have to divide the bone at that situation, but perhaps three or four inches above it. Then you dissect back the integuments, and that is the first of the operation.

The second step of the operation consists in cutting circularly through the muscles down to the bone, as high up as the point to which you have reflected the integuments. When the muscles are thus divided, you find that they retract unequally. There are some of the muscles that are loose—that are not adherent to the bone; others are fixed close to the bone, and of course the loose muscles retract much more than the fixed muscles do. After, then, you have divided in this way, down to the bone, both the loose and fixed muscles, you will then, drawing up the muscles with your own hand in the way I shew you, again carry the knife down to the bone, cutting through the fixed muscles higher up; and in the living subject, where it is desirable to saw through the bone as high up as you can, you may find it necessary to carry the point a little down upon that part of the bone, so as to detach the muscles immediately where they adhere to it. Your object, in general, will be to saw through the bone as high up as you can, in order to preserve as large a portion of soft parts, to cover the exterior of the bone, as possible. Now this mode of proceeding, so far as I have already shewn you, is called amputation by the *double incision*, for heretofore it was the practice with surgeons to cut through the skin and muscles down to the bone at once. That mode of proceeding would necessarily be attended with this inconvenience—that the skin afterwards would not be sufficient to cover over the surface of the muscles, and there would be a large circular wound, equal in size to the dimensions of the incision that was made. It was soon found, therefore, to be a much more convenient plan to cut through the integuments, to separate them, turn them back, and then cut through the muscles, so that the wound would admit of being brought together, and be capable of forming an immediate union.

Then, having carried the steps of the operation thus far, the only part that remains is to saw through the bone; and in

doing this, the object is to divide it without injuring any of the soft parts. For this purpose, it is most convenient to employ what is called a *retractor*—that is, a piece of stout linen which is split at one end, so as to form two divisions, and these are passed on each side of the bone. The two ends are drawn close above the bone, and the assistant, by means of this retractor, holds the divided soft parts out of the way while you divide the bone with a saw. The use of the retractor is not absolutely necessary, for with your own hand you may hold the soft parts sufficiently out of the way to accomplish the purposes of the operation; but it is more convenient to employ the retractor, as you avoid all risk of injury to the soft parts.

[The lecturer then presented the limb which he had removed, and said]—Now you will observe, when a limb has been removed in this way, the part that is removed represents a cone, the base of which is the division of the integuments, and the apex of which is the divided bone. You have to divide the integuments, therefore, considerably lower down than the muscles, and to divide the muscles considerably lower down than the bone; consequently you find that the wound that is thus formed admits of being united so as to represent a straight line across the face of the stump, and it may be united across the stump transversely, or may be united in the opposite directions.

Then, having removed the parts in this way, the next object is to secure the vessels that are divided in the amputation. In the first instance, knowing the situation of the main artery of the limb, you take hold of it with a pair of forceps, and drawing it out (separating it if it does not immediately come away with the forceps) from the parts to which it is connected, you put a ligature round it. There may be, perhaps, one or two other principal arteries of the limb that you tie in the same way, and having secured these, you generally find it expedient to loosen the tourniquet, in order to see what other vessels bleed. If you find two or three arteries bleeding very freely, you may secure them; but after having secured two or three vessels, you generally find it necessary to take away the tourniquet entirely, for while the tourniquet remains you find a great flow of venous blood from the surface of the stump, but when the tourniquet is entirely removed you find it is put a stop to, and then you can look for the arterial orifices that produce the hæmorrhage. The number of vessels that require ligatures after an operation, is very variable. Sometimes the femoral artery, and perhaps one or two only, require to be tied; in other instances you may have ten or even fifteen to tie, after the amputation of the thigh. It is expedient to secure, by ligature, all the



vessels that bleed, before you dress the stump; for it is a very perplexing circumstance to have hæmorrhage occur after the operation—to be called in the evening, or during the night of the operation, and to be obliged to undo the stump and seek for the bleeding vessels. This is very painful to the patient, and exceedingly annoying to the surgeon; and, therefore, it is much better for you to employ a little more time in securing, at the period you make the amputation, all the vessels that bleed, than to subject yourself to this kind of inconvenience. After tying the femoral artery, you often find that hæmorrhage continues from the femoral vein, and that a very considerable stream of venous blood will issue from it. It is, however, very desirable to avoid the application of a permanent ligature upon a vein, such application frequently producing inflammation of the vein—indeed inflammation which is of the most dangerous kind, often terminating fatally. It is a great addition to the risk of a patient's life to place a ligature on a large venous trunk, and, therefore, it is better, if you have the opportunity, to press on the orifice of the divided vein with the finger, and proceed to secure other vessels that may require a ligature; and perhaps by the time that you have secured all the other vessels, the femoral vein may no longer bleed; or you may apply a temporary ligature—that is, a ligature on the vein, merely tied with a single knot, and then take it off when you have secured all the other vessels. If the vein do not then bleed, a permanent ligature is unnecessary; but if at the end of the operation a free stream of venous blood proceed from the vein, then it is the lesser evil of the two to apply a ligature. It has happened to me in a great number of instances, to find it necessary to tie the femoral vein, and I do not remember such inflammation to have arisen, though it is said to have been frequently produced by the application of a ligature to a vein. If there should be bleeding from small vessels, perhaps you can stop it by sponging the surface of the stump with cold water; and in the course of your proceeding to secure the vessels which are divided in the amputation, it is as well to employ a sponge dipped in cold water, which promotes the retraction of the divided vessels, and tends to diminish the number requiring ligatures.

Then, having secured all the vessels that bleed, the next point is to dress the wound, and in doing this you follow the general rules that I have already laid down for the approximation of recent wounds—that is, you bring the divided parts together, you retain the sides of the wound in apposition by strips of sticking plaister, and you trust to that mode for their union.

You may either unite the wound in a line across the surface of the stump, or you may

unite it in an opposite direction, according as the integuments and soft parts can be most conveniently approximated in the one or the other way. I do not know that there is any great preference in the one or the other mode; but perhaps, on the whole, the union from behind forwards is the best; in which case the sides of the wound are brought together so truly, that the wound when united forms a straight line. You employ a broad strip of sticking plaister about the middle of the wound, which will pass up nearly the length of the thigh, both on one side and on the other, and you bring the edges gently together—not making a point of drawing them forcibly together, or approximating them closely; and then you employ as many other strips as will be sufficient to maintain the sides of the wound in contact. It may be as well, perhaps, to leave the inferior angle of the wound a little open; for there is a little oozing of blood sometimes from it, and it is better to leave the wound in a state favourable to its escape, than to have the wound so united that it cannot escape; in which case it may produce distention, and thus excite further hæmorrhage. The ligatures that have been applied to the various vessels are to be brought out as near as possible to the situation where the vessels have been divided, or they may be brought out at the posterior angle of the wound—that is the situation where they will escape most readily. No further dressing is necessary—or, at all events, nothing more is necessary than the application of a portion of lint spread with spermaceti cerate over the ligatures, to prevent them from being entangled; and that you may secure by a strip of adhesive plaister. It has commonly been the practice to apply a circular bandage from the bend of the thigh, carrying it down to the stump, and to apply a large portion of linen over the wound, and secure it by adhesive strips; and apply a bandage carried from before backwards, and one laterally over the end of the stump; and farther to include the whole of the apparatus thus applied by means of a woollen night cap drawn over the end of the stump. This is a mode of dressing that was generally employed in this hospital some years ago; but the plan, you observe, is contrary to the general principles that ought to be followed in uniting recent wounds. It is covering the wound with a quantity of substances which are calculated to heat it, and of course which favour the occurrence of inflammation, and therefore are liable to frustrate the object in view—the union of the wound by adhesion. In this case, as in other instances of recent wounds, we must endeavour to keep down inflammation—we must do all we can to prevent the increased action in the part going beyond that extent which is simply sufficient for the agglutination of the sides of the wound, and

therefore the cooler we can keep the wound and the surface of the stump, the more likely we are to have the union take place in the way we desire; while, on the contrary, the more we cover and heat the parts with a load of dressing, the greater probability there will be that we shall have inflammation taking place, and that we shall have that inflammation proceed the length of forming suppuration. There are some instances in which the muscles of the limb are very loose and flabby at the time we operate—where the patient is considerably reduced, and where there is but little probability of inflammatory action taking place; and we may in such a case deem it expedient, in order to support the parts altogether, to apply a circular bandage in the way I have mentioned from the bend of the thigh to the end of the stump—it must not, however, be applied tightly. I think the surgeon who applies a bandage ought himself to see the patient a few hours after the operation, or take care that he is seen by some other individual in whom he can place confidence; and he must then divide the bandage, if it should have become tight in consequence of the swelling of the parts subsequent to the performance of the operation. I have no remarks to make relative to the future treatment of the wound in addition to those I had occasion to mention to you relative to the union of recent wounds.

#### *Amputation of the Leg.*

In an operation where there are two bones to be divided, the mode of proceeding is essentially the same as where there is only one. The leg is the most common example of this species of operation, and the principal difference in the two cases is, that in using the retractor you have to divide it into three portions. There must be a piece of the retractor pass in the interval between the two bones, when you come to perform this part of the operation. Now in amputating the leg, we do not observe the rule which I have already mentioned to you as applicable to the thigh—that of attempting to preserve as much of the limb as possible. Supposing that disease of the ankle-joint is the cause requiring amputation of the leg, and supposing the disease should be limited to the situation of the ankle, we do not operate immediately above the seat of disease, but at a certain distance below the knee. It is found that in reference to the subsequent wearing of an artificial limb for the support of the body, that this answers much better upon the natural surface of the knee than if an artificial limb were adjusted to the extremity of the leg, when it has been amputated low down, the smaller end of the stump in that case being apt to ulcerate. Hence it is admitted that an artificial limb adapted to the lower part of the leg does not answer the

purpose by any means so conveniently as that which is accommodated to the knee. We operate, therefore, on the leg in such a way as to divide the tibia and fibula about four fingers' breadth below the superior articular extremity of the tibia, and that leaves a broad surface for the limb to rest upon the artificial leg. The amputation of the limb low down, however, has been frequently tried, under the idea of saving a longer portion of the member; but it has not been found to answer so well as the other mode.

I consider that the circular amputation answers best in the leg, though this is a part in which the flap operation has been repeatedly practised—in fact, the one in which it was originally proposed. In the flap operation, the flap is cut from the calf of the leg; either an incision is made through the integuments in a sort of oval direction, and then the muscles are divided, or a sharp-pointed instrument is carried through the calf of the leg, and the flap made from within outwards. You may make the flap by an instrument of this kind [producing it], called a *catling*: it is a double-edged knife, with a sharp point, and you may thrust it through the limb from one side to another at the point you propose to make the incision, and by carrying it from within outwards, you cut a flap from the muscles of the calf. I will just shew you the plan of proceeding, in order to point out to you the mode in which the process is accomplished.

[Mr. Lawrence then proceeded to the performance of the operation, and said,] you carry the instrument in the first place through the muscles of the calf, close to the posterior surface of the tibia and fibula. Then having done this, you have got a flap which you will afterwards apply to the surface of the stump. It is necessary in amputating the leg, to reflect the integuments to a certain distance along the surface of the tibia, because that is a part where there are no other soft parts that cover the bone; and then you divide the muscles that are seated between the two bones. Having proceeded thus far, whether you operate by the circular incision or by the flap, after having cut the muscles that lie exteriorly, you must divide those that lie just between the two bones. Whether you are operating on the leg, or whether you are operating on the fore-arm, with the instrument called a *catling*, you carry it between the bones, and then divide, first on one bone and then on the other, so as to cut through the whole of the muscular fibres between the two bones. I pass the *catling* from before, and carry it close down to the tibia, so as to divide all the muscles that are seated upon it; and I carry it in the same way down to the fibula, and then it passes in between them, so as to divide the muscles in that direction. It is necessary here, on account of the close adhesion of some of the muscular and tendinous

fibres of the bones, to be pretty cautious in dividing the whole of the soft parts before you begin to use the saw. Then in applying the retractor, the middle of the three divisions is carried in the interval of these two bones.

In dividing the tibia and fibula the surgeon generally places himself on the inside of the limb, so as to divide the two bones together. This, however, is not absolutely necessary; you may saw through the tibia first and the fibula afterwards, or *vice versa*. If any muscular substance should remain adherent to either bone, you must divide it with a knife, so as not to allow it to be lacerated. Then you bring together the edges of the wound by drawing forwards the flap that has been left of the muscles of the calf. You observe that you can bring together in a very even manner the soft parts that have been divided in this way. But you will understand that, for my own part, I consider the circular amputation is the best for the removal of the limb in that situation in which amputation of the leg is usually performed, and the subsequent union of the wound is then accomplished by the approximation of its sides laterally, just in the same way that I recommended you to unite the sides of the wound in the amputation of the thigh.

#### *Amputation of the Fingers.*

Now amputation, I have mentioned to you, is performed either in the continuity of a limb, or at a joint. There are certain states in which we amputate at a joint by preference, and there are others in which we amputate at a joint by necessity. To the latter case belong amputations at the shoulder and at the hip-joints—to the former, amputation at the joints of the fingers and of the wrist.

Amputation of the *fingers* is a very simple affair indeed. Amputation of the fingers is performed by a *circular* incision, which you carry a little beyond the articular extremities of the finger down to the bone, and you remove the part that you wish to amputate at the articulation. You carry a circular cut, leaving just as much integument as will be sufficient to cover the extremity of the bone afterwards. You can generally in the living subject draw the integument back, and retract it sufficiently to divide the bone at the joint without dissecting it back. You then cut into the joint, either on the external or the internal side.

[Mr. Lawrence then performed the operation, and presenting the removed portion, he said:—This is cut off at the joint, and you see the integument that is thus left is sufficient when brought together completely to cover the extremity.]

It is sometimes advised that the cartilage covering the articular extremity should be

removed when you amputate in the articulation. This, however, is unnecessary: for if you bring the parts together, they will unite very well over the articular cartilage. Nevertheless, it is not difficult to pare off or scrape away the articular cartilage on the end of a bone, and there is no particular objection to it.

In this way you perform amputation at any of the joints of the fingers. When you have to amputate between the metacarpal bone and the first phalanx of the finger, you can do this at the articulation. You make a double incision, one on each side, cutting in an oblique line, and you find it further of advantage, in reference to the subsequent shape of the limb and the convenient arrangement of the parts, to take away, not merely that part of the finger that you wish to amputate, but also to remove the head of the metacarpal bone; for, if that be left, the metacarpus retains its natural breadth, and of course there is a greater gap between the fingers. If you take away the head of the metacarpal bone, the two fingers come nearer together, and you thereby diminish the opening that is left. In this way you carry the incision from before backwards, and then you divide in an opposite direction.

Now you will, perhaps, find it most convenient just to separate the finger first, before you remove the head of the metacarpal bone, and cut the joint at the side the same as if you were removing the finger only. You first of all take off the finger in the way I now shew you, and then you get the head of the metacarpal bone exposed. You carry the knife close upon the bone on each side, so as to separate the soft parts, and you then take off the extremity of the metacarpal bone, about three-fourths of an inch or an inch from its head, by means of Mr. Liston's strong bone-nippers. You separate the metacarpal bone, and then the edges of the wound unite, and it makes a good job.

#### *Amputation of the Wrist.*

You may amputate the joint at the wrist; in doing which you make a semi-circular incision, extending along the back of the carpus on one side; and then you make a corresponding cut on the opposite side. Or you may use a catling, transfixing the limb, and cut from the inside outwards. It may be done in either way. You carry the catling in along the back, and cut flat, in the manner I am now doing; you cut into the wrist-joint at the back, and you then carry the instrument in a corresponding direction in the front.

#### *Amputation at the Hip-Joint.*

The amputations of the *hip* and the *shoulder* joints are those which I have mentioned to you as occurring under circumstances of necessity. Those at the fingers



and the wrist are amputations performed by choice in that position.

Now, with respect to the *hip*, the necessity of amputating there occurs very rarely. There has been no amputation at the hip-joint in this hospital, at all events, for the last thirty years, or rather more. I have never seen it, nor have I ever had occasion to perform it; and I apprehend there is little chance of any gentleman in this theatre being called upon to do it; so that it is hardly necessary to enter much on the particular mode of performing this operation. I once had occasion, in amputating the thigh, to cut so close upon the trunk of the body (in fact, to take off about two-thirds of the trochanter major) that in that case I could with the greatest facility have taken out, on the face of the stump, the head of the thigh-bone, and then it would have constituted amputation of the hip-joint. It appears to me that in many cases the ordinary circular amputation, carried up so far as to allow the removal of the head of the bone when thus exposed, would do as well as amputation at the hip-joint, and perhaps better. Now you may amputate the hip-joint by making flaps. You carry a long, double-edged, sharp knife (perhaps rather longer than the one I am now using) near the external side of the artery, through the back of the limb, taking it along the trochanter, so as to cut the flap on the outside somewhere about in the direction I now shew you, separating the flap from the joint. If you carry the knife in on the external side of the artery, it furnishes you with an opportunity of tying the artery, which is by that means pretty much exposed, and then you can make the internal flap on the opposite side, disarticulate the limb, and remove it. I do not, however, perceive that that mode is preferable to the division of the limb high up, and then taking out the head of the bone in the surface of the stump, in the way that I have mentioned.

#### *Amputation at the Shoulder-Joint.*

Amputation of the *shoulder-joint* is also an occurrence that is rare in what is called *civil* practice, although it is more frequent in military. I think it is said that Baron Larrey, who was surgeon in chief to Napoleon in most of his campaigns, has performed the operation of amputating the shoulder-joint one hundred times, though I do not believe that it has been performed at this hospital twice in the last thirty years; and therefore we may consider that the circumstances requiring its performance do not occur very frequently.

In amputation either of the shoulder or of the hip-joint, you must trust to compression for arresting the hæmorrhage, there being no opportunity for applying a tourniquet. In the case of amputation of the hip-joint, the artery must be pressed upon where it passes under the crural arch; and in the

case of amputation of the shoulder-joint, the artery must be pressed upon where it passes over the surface of the first rib. It is expedient, on this account, in both operations, to perform the separation of the member as quickly as possible; for although the artery, in either situation, may be effectually compressed, and although you can stop the passage of blood through it by pressure, you cannot so confidently depend upon the continued and effective pressure for a certain length of time, as to proceed at all safely in the operation. The movements of the patient, his exertions, and the relaxing of the finger of the person who makes the pressure, tend to render the pressure upon the artery more or less imperfect, and of course exposes the patient to a considerable loss of blood from one of the large vessels so divided.

It is expedient, particularly if you are operating in one of those situations to which I have just adverted, that you should have made up your mind accurately on all the steps you have to take, and that you should have a complete plan of the process before you begin to operate, in order that you may be prepared to go through it calmly. This is a measure that is advisable in all cases. It is well to reflect carefully before you perform an operation—to familiarise your mind with the operation, and to prepare the necessary instruments—to have them arranged in a regular systematic way, according to the steps of the operation, so that you may go through the mechanical process with facility, having previously arranged every part in your own mind. We cannot consider that the dexterity of the surgeon is in proportion to the time he consumes in the operation, yet *cæteris paribus*, we should say that that operation is best performed which is executed in the shortest time, because it abridges the sufferings of the patient, which, in itself, is an important object.

Amputation at the shoulder-joint is a flap operation, that is, you make a couple of flaps, which you cut from the soft parts surrounding the articulation, and it is expedient to make the flap which contains the artery, last. These flaps may be formed either by cutting from without inwards, or in an opposite direction. You make the external flap by cutting from the point of the acromion obliquely forwards to the axilla, and you make the internal flap by cutting from the same point backwards. After making the external flap, which is to be held aside by an assistant, you cut into the joint, and separate the head of the bone from the articular cavity, before you proceed to divide the soft parts that are to constitute the internal flap. Having done that, you are to grasp it in your hand so as to command the artery before you proceed to divide it.

[Mr. Lawrence then proceeded to perform the operation.]

## CASE IN WHICH LITHOTRITY WAS SUCCESSFULLY PERFORMED.

*To the Editor of the London Medical Gazette.*

SIR,

SAMUEL GUDGE, aged 54, a pensioner of Greenwich hospital, received under my care for gonorrhœa, after having been treated in the usual manner for the space of fifteen days, and supposing that his complaint was not simply gonorrhœa, I introduced a sound, and found a large calculus in the bladder, the existence of which the patient would not believe, as he had never suffered the slightest symptom of stone, nor did he feel the least inconvenience from it, in consequence, as we suppose, of its being lodged in a distention of the bladder corresponding to its size, immediately behind the prostate gland, which was inferred from its not being felt at all when the man was sounded standing, but upon placing him in a horizontal position it fell to the fundus of the bladder, and could be at all times distinctly felt. The patient being unwilling to submit to the operation of lithotomy, I proposed to him that of lithotritry, with a view of putting that operation to the test, having seen the instruments of the Baron Heurteloup, and being satisfied in my own mind that they were calculated to perform all that the Baron promised. The man having given his consent, I requested the Baron to see and sound him, which he did, and willingly undertook to operate on him gratuitously, Sir R. Keats, the governor of the hospital, with the laudable view of promoting science, and lessening human suffering, having kindly sanctioned the operation. Preparatory to the Baron's coming down, I dilated the lips of the urethra with a bistoury, which were contracted at the superior angle, and ultimately passed a straight bougie, No. 19, direct into the bladder.

May 10th.—The rectum having been previously emptied by an enema, the Baron proceeded to the operation. Having injected the bladder full of warm water, he introduced his instrument with four branches, and soon succeeded in grasping the stone, which he drilled and excavated, the patient suffering no other pain than a desire to void his urine during the operation. After the Baron had withdrawn his instru-

ment, the urine the patient passed was slightly tinged with blood, and much sand or ground stone came away, but no more blood after the first time.

11th.—The patient feels well, but complains of some smarting in making water, which still contains sand.

14th.—Urine turbid, but contains no sand.

15th.—Sounded him; stone feels rough, and seems to be placed with its long axis from side to side; he complains of some pain in the lumbar region. The quantity of detritus collected from the first drilling was 5ss.

June 3d.—The Baron repeated the drilling and perforating with a larger instrument, but which had only three branches; the process occupied about a quarter of an hour; a considerable quantity of sand came away in the urine, but no blood.

4th.—Sounded, but found the stone not broken; the quantity of detritus from the last operation collected grs. 45.

10th.—The Baron again repeated the operation, but found more difficulty in introducing the instrument, on account of the urethra being rather swollen, as he supposed, from the former operation. He grasped the stone without difficulty, but to perforate it was not so easy, on account of its extreme hardness, which was so great as to resist the virgule or excavator, and in taking another presentation of the stone one of the claws of the instrument got into a former perforation, and it occupied the Baron several minutes before he could get rid of the stone. After this, when he emptied the bladder, some coagulum passed, but water, injected immediately, came away quite clear.

11th.—Urine clear, but some soreness and scalding.

12th.—Some hard dark pieces of calculus in the urethra, but the stone still continues large. The quantity of detritus collected since the last operation, grs. 122.

25th.—Rigors succeeded by perspiration. I passed a large sound with great ease; he complains of his water scalding him, and it has an offensive smell; the stone feels rougher than at first, and seems to descend more closely to the neck of the bladder. The Baron came down to-day with the intention of operating, but deferred it, in consequence of the man's indisposition.

30th.—The Baron operated with an

instrument which seizes upon the stone with three claws, pointed inwards at almost a right angle; and when thus held, he strikes the stone with a central rod and hammer, by which the claws reduce the size of the stone exteriorly. The Baron found considerable difficulty in getting rid of the stone from the instrument, in consequence of it, or some portion of it, having got between the central rod and one of the claws. The patient evacuated several pieces of the exterior part of the stone with the water immediately after the instrument was withdrawn.

July 1st.—Has passed a large quantity of laminated fragments of the calculus, and complains of the stone feeling very sharp, particularly after making water. Quantity of detritus collected, grs. 34.

7th.—The Baron came and drilled the stone in several places; he also used the hammer once; the man complained of more pain than on former occasions. After the instrument was withdrawn, several large and small pieces of detritus came away.

8th.—Complains of numbness about the pubis.

11th.—Complains of some uneasiness in perineo, and wished the large sound to be introduced, which passed without difficulty.

13th.—Mr. Hume, having analyzed the fragments of the calculus, reported it to be lithic acid and animal matter, probably urea mixed with it. The quantity of detritus collected, grs. 34.

14th.—The Baron operated, but did not seem to perforate the stone so much as usual; he hammered the central rod, to reduce the stone exteriorly. The process was rendered more tedious and painful than usual in consequence of some fragments, mixed with fibrine, getting entangled in the claws, and preventing their being perfectly closed when withdrawn.

15th.—A large piece of calculus, weighing grs. 10, was extracted from the urethra by the forceps, several smaller fragments being discharged.

18th.—Passed a large fragment, in which five lamina were distinctly seen, dark and light coloured alternately.

20th.—A small piece of stone was sticking in the urethra, which came away by injecting the bladder full of water by the stomach pump fitted with a catheter. I afterwards introduced a

large sound. The quantity of detritus collected, grs. 50.

At 2 P.M. the Baron operated with a smaller three-branched instrument, which he preferred in consequence of the difficulty he found the last time: he perforated with it in several places. The quantity of detritus collected, grs. 34.

29th.—The Baron operated; but on this occasion he operated with the bris-coque instead of the *trois branches* instrument, and I observed that with this instrument he seized the stone with more facility, and gave the patient less pain than with the others, though he did not suffer much from either. The detritus collected was more square, the quantity grs. 21.

August 5th.—The Baron repeated the use of the bris-coque, with which he twice seized the stone without difficulty, and gave the patient little or no pain. Some detritus came away with the water when the instrument was withdrawn, and the bladder was subsequently washed out with warm water. In the two last operations no blood.

14th.—A little piece of calculus still in the bladder, which is too small to communicate the usual feeling to the hand by the sound, though it can be distinctly heard. Some small fragments came away with the urine after sounding, though none had passed for the last five days.

16th.—This forenoon, a fragment of the stone having lodged in the urethra, I removed it by the forceps. At 2 P.M. the Baron came prepared to use the bris-coque, but having injected the bladder, could not find the least particle of stone remaining; so there is reason to believe that the fragment which came away this morning was the small piece I heard yesterday.

17th.—The urine clear, and the patient quite well. The quantity of detritus collected, grs. 49.

Ten days have now elapsed since the last portion of stone was extracted, and the man is in the enjoyment of good health; and as the above case affords a proof of the success of an operation which is nearly new in this country, I consider it may be advantageous to the profession, and the community at large, to give it publicity in the periodical journals.

R. DOBSON, M.D.

Surgeon, Greenwich-Hospital,  
August 26th, 1830.



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## LECTURES ON SURGERY,

*Delivered at St. Bartholomew's Hospital,*

BY WILLIAM LAWRENCE, F.R.S.

### LECTURE LXXXVIII.

*Recapitulation—Amputation at the Shoulder-joint—Partial Amputation of the Foot and Hand—Excision of certain Joints—Lithotomy—Various modes of performing this Operation.*

THE amputation of the arm at the shoulder-joint is generally required in cases of serious injury of the bone, such as those inflicted by gun-shot wounds, or in consequence of disease occupying the upper part of the bone, and extending into the joint. In some cases of this kind the removal of the disease may be accomplished without taking away the whole limb: supposing that the head of the bone should be broken and splintered by a bullet, and that at the same time there should be a considerable wound of the soft parts, you may, by enlarging the wound, be enabled to remove the head of the bone, and the portion of it which is thus broken and splintered, without performing amputation. You thus leave the limb in a state in which, though its motions are considerably impeded, it may be very useful to the patient. You will recollect that when amputation is performed at the shoulder-joint you cannot supply the individual with any artificial substitute for the limb that is lost; therefore, although the motions of the arm and forearm may be considerably less perfect than before the removal of the head of the humerus, they may still be of great use to the individual—particularly in the case of the right arm.

This operation of excision of the head of the humerus has been performed in several instances, and generally with very satisfactory results, and has left the person in a much better situation than he would have been in if amputation at the shoulder-joint had been

performed. In any case, therefore, of injury or disease involving the upper part of the humerus, if you are satisfied that the disease is confined to the humerus, and that the scapula is uninjured, or that the disease does not extend to it, you may safely attempt this mode of relieving the patient. In other instances, where the condition of the member generally forms the cause for the operation, of course the mere excision of the head of the bone will not answer the purpose; but where the disease is confined to the head of the humerus, or that part of the bone immediately adjoining it, this minor operation of cutting out the injured part may save the patient the more serious loss of the entire extremity. The operation may be done, in the case of a wound, by merely enlarging it so as to expose the head of the bone; or, if there should be no wound, by making a sufficient incision, and cutting round the head of the bone, so as to enable you to dislocate it, bring it through the opening you have made, and saw it off. No great difficulty has been experienced in the performance of this operation, in those instances where it has been practised.

I mentioned to you that amputation may be performed in the wrist-joint, so that where the disease or injury is confined to the hand, we may save the whole of the forearm. In amputations of the upper extremity, it is desirable to adhere to the general rule I have mentioned, of saving as much of the limb as possible; therefore, if you can perform the operation of amputation at the wrist, you will do so; if, however, the wrist-joint be diseased, you will of course operate above it, though as near the disease as possible. In the case of an injury by gun-shot, or otherwise, requiring amputation, you must of course perform the operation according to the situation of the injury.

If you amputate in the continuity of the forearm, the most convenient method is the circular incision, cutting through the integuments, and reflecting as much of them as will be sufficient to cover the stump. It is ne-

cessary to cut carefully round the bones, and to detach the muscles from their situations in the forearm, for they are connected closely to the bones and to the dense fascia, so that they do not retract like the muscles in the lower extremity; you must detach them, therefore, to some extent, in order to get a sufficient covering for the bones after the amputation.

It sometimes happens in the hand or foot that disease or injury attacks a considerable portion of the member, without actually rendering the whole useless. Scrofulous disease may be situated in the metacarpus; it may affect one or two bones of it, and not the others. Sometimes similar disease may be situated in the metatarsus, and not extend to the tarsal bones; it may be a disease of such a kind as to render necessary the immediate removal of the part affected, and yet there may be some advantage in limiting the excision to the diseased parts, because in this way you may leave the patient with a more useful limb than if you performed amputation of the entire hand or foot; a partial amputation of the hand or foot, therefore, may be advantageously practised under certain circumstances. It not unfrequently happens that the hand is extensively injured;—for example, it may be shattered, or severely wounded, by the bursting of a gun or pistol; or it may be entangled in machinery, and dreadfully torn. Under these circumstances you may find that one or two of the fingers, or the thumb, may have escaped, while all the rest may be so lacerated, and the bones so broken, that you cannot hope to restore them to a useful condition. You, therefore, take away the parts that are irreparably injured, and leave behind those which you may reasonably expect to restore: although it should be the thumb, or even the little finger alone, the hand will be much more useful to the patient subsequently, than if all the fingers had been removed. You should divide the soft parts, therefore, and cut through and remove the injured metacarpal bones, leaving those which have escaped injury. When you first see a part that has been extensively lacerated and mangled in this way, you are inclined to suppose that it will be necessary to remove it entirely; but you should carefully examine the case, and when you find that even a little finger has escaped, you should, if possible, give the patient the benefit that is to be derived from retaining that part.

In the foot, partial amputation has been performed; in cases, for instance, of scrofulous affection of the metatarsus, not extending to the tarsus. Here amputation may be performed in the middle of the foot, that is, at the articulation which connects the metatarsal to the tarsal bones. The operation is simple enough; you make an

incision along the back of the foot a little in front of the articulation. It is a kind of flap operation, and the flap of the soft parts must be made from the sole of the foot, for on the back you have merely thin skin covering the bones, which will not answer the purpose. You make an incision across the sole of the foot as much in front of the articulation as will enable you to take up a flap sufficient to cover the wound;—when you have turned up the integuments on the bottom of the foot, and made the flap, you must divide the ligaments that tie the metatarsal to the tarsal bones, and remove the former together with the toes. You then adjust the flap, and unite the wound by adhesive plaster, or by sutures. Partial amputation of the foot has even been performed, when certain of the tarsal bones are the seat of disease, between the astragalus and os naviculare towards the inside, and the os calcis and os cuboides on the outside. The line of junction between these bones is nearly transverse, about an inch in front of the ankle; and if you perform the partial amputation in this case, you would do as I have mentioned;—make a transverse division along the back of the foot, detach the parts in the sole, and separate the bones at their articulation.

There is some doubt in my mind respecting the advantage to be derived from these partial amputations of the foot. What is left for supporting the weight of the body, is so different from the natural surface of the foot, that perhaps it may be doubtful in certain cases whether it is better than a wooden leg. I admitted a patient some time ago into the hospital, who had undergone partial amputation at the junction of the tarsus with the metatarsus, and he found the condition of the stump so inconvenient—it was so liable to ulceration of the cicatrix, and the other inconveniences were so great—that he came to the hospital to beg that I would amputate the leg at the usual place just below the knee, so that he might wear a wooden leg. I did this, and he found himself much better off after the second operation than after the first, for in truth he had not been able to walk without pain during the two years that had elapsed since the first operation.

#### *Excision of the Joints.*

In cases of certain disease of the joints, it has been proposed in certain instances to substitute for amputation of the limb, excision of the diseased extremities of the bones; to make such incisions as will lay bare the ends of the bones constituting the articulation, to saw through them, and to remove them. This operation was first proposed by Mr. Park, a surgeon at Liverpool, a good many years ago, though I believe he is still living. He performed it at the elbow and at the

knee-joint, and he stated that in both instances the limbs were afterwards of very considerable use to the patients. The operation has since that time been practised by others, but the results have not been sufficiently encouraging to lead to a very general adoption of it. Indeed, on the first proposal of such an operation, it strikes us as one not very likely to lead to useful results. In respect, however, of the elbow-joint, I believe that in some cases where it has been performed, the patient has retained a very useful degree of motion of the fore-arm, together with some mobility in the situation of the excised joint. The results have been most favourable in the case of the elbow-joint. In the knee the portion of the bone to be removed is so large, and the limb after the operation would seem to be so little capable of supporting the weight of the body, or of performing its functions, that we can hardly expect that it should be more useful than an ordinary wooden-leg would be, after amputation of the thigh. I should observe, however, that this excision of the diseased ends of bones in other parts, which would otherwise have required amputation, has lately been performed by Mr. Crampton, of Dublin, who has given a favourable account of the results. I should suppose that in order to perform this operation with advantage, it would be necessary to have a case where you should be quite satisfied that the cause of disease existed in the bone, and that the soft parts surrounding the joint had not suffered very extensively. It is only applicable to those cases where the soft parts remain in a tolerably sound state; and perhaps, under such circumstances, it might be performed at the elbow. I should observe, however, that I have never performed the operation, nor have I seen it performed; therefore I know nothing on the subject from my own experience.

#### *Operation of Lithotomy.*

I have next to speak of the operation of lithotomy; and I have made every effort to procure a subject on which I might show you the operation, but in vain, and I must now consider it hopeless; I shall, therefore, proceed to speak of some of the points connected with the operation, and show you some of the instruments that are used in performing it.

*Lateral Operation.*—I have already apprised you that I consider the lateral operation—in which the neck of the bladder is divided, the external opening being made on one side of the perineum—preferable both to the high operation, in which the opening is made above the pubes; and to the more recently-proposed rectovesical operation, in which the bladder is opened through the rectum: the latter, in-

deed, I believe, has not been practised in this country, so that we know nothing of it here from actual trial. The lateral operation, in the ordinary run of cases, appears to me to be the most simple mode of making an opening into the bladder and taking a stone out of it; and at the same time it has this advantage over the high operation, that the incision into the bladder is made in a situation where there is no risk of wounding any very important parts. This is not the case in performing the high operation, for there you necessarily come very near to the peritoneum, and run the risk of wounding it, or of exciting inflammation in the cavity of the abdomen or surrounding cellular membrane;—indeed it appears to me that considerable risk is inseparable from the performance of the high operation.

Previous to performing the lateral operation, you secure the hands and feet of the patient in such a way that he may be easily held in the situation in which you place him, and that, at the same time, the perineum may be completely exposed. The confinement of the hands and feet is rather for the purpose of procuring this exposure of the perineum than to prevent the movements of the patient, of which there is no greater danger in this than in other operations. To bind the hands and feet, you take one of these garters and double it in the way I now show you, pass the two ends through the noose that is formed, and put that round the wrist of the patient; then he grasps firmly with the hand the sole of his foot, under which you carry one end of the garter from the outside, and the other end from the inside, crossing them in that situation; you then bring them both up over the back of the foot, and carry one on the outside, and the other on the inside round the ankle and wrist, so that they form a figure of 8. In this way the hands and feet of the patient are very effectually confined. Before doing this, however, you introduce into the bladder the instrument called a *staff* [exhibiting it], which has the same form as the sound, differing from it only in having a deep groove along a part of its convex side, which serves as a guide for the cutting instrument that is to make the opening into the neck of the bladder. You introduce into the bladder this instrument, and feel the stone with it; and it is considered a necessary precaution that you should be sure of feeling the stone immediately before you proceed to the operation—it is deemed sufficient to have felt the stone two or three days before. It is the striking of the instrument on the stone that affords the only clear evidence of its existence in the bladder, and you ought to have this proof immediately before you proceed to the performance of the operation. The hair should be previously shaved off the perineum and parts about the anus, so that they may be completely clear.



When the surgeon who operates has placed the staff in the position which he thinks best, it is to be firmly held there by an assistant, who stands by the side of the patient. The position in which the instrument should be held during the performance of the first incision through the integuments and adipose membrane is not, however, of much consequence, provided its extremity has passed fairly into the cavity of the bladder.

The first step of the operation, then, consists in making a division through the integuments and subjacent soft parts, until the groove of the staff is exposed, and the parts immediately behind the bulb of the urethra are freely divided. If you are operating on the adult, the general rule to be observed respecting the direction of the external incision is, to make it about an inch in front of the anus, and then to carry it obliquely outwards and a little downwards between the anus and the tuberosity of the ischium. The wound through the integuments and external soft parts should be so situated and directed as to be as much as possible opposite to the wound in the side of the bladder, that there may be a straight passage for the forceps, by which you are to seize the stone. The object, therefore, would be to have a completely parallel cut, a cut which should have precisely the same direction in the neck of the bladder and in the integuments, for then you can introduce the forceps in a straight direction from without into the bladder. If you make the wound in the integuments more forwards or upwards than I have mentioned, then the course of the incision will be curved, because the wound in the bladder can only be made in a certain situation; you have no choice as to that, and your business is to make your external incision exactly parallel and opposite the spot at which you are afterwards to cut into the bladder. [Mr. Lawrence illustrated the operation by means of a diagram.] Now, supposing this to represent the arch of the pubes, and this the opening of the rectum, the course of the incision will be about such as I now point out to you. It commences in the situation of the raphe of the perineum, about an inch in front of the anus, and extends a little outwards between the anus and tuberosity of the ischium, being about two or three inches in length. This incision is made with a double-edged sharp pointed bistoury; the point of which you pass through the integuments deep into the perineum, directing it into the groove of the staff with the finger. Having carried the instrument in that way, you direct it outwards, so as to make the incision in the way I have mentioned. Frequently, however, particularly if the subject be fat, you do not cut into the groove of the staff at once, nor is it necessary to do so; you may be obliged to make two or three

strokes with the scalpel; and then, when you come to feel the groove of the staff, you put the nail of your fore-finger into it, and this serves as a director in making a free division along the urethra, immediately behind the bulb. The reason why I particularly mention this situation as the part in which the opening is to be made, is this—that if you were to slit up ever so much of the canal, in front of the bulb, it would not at all facilitate the extraction of the stone; such a division can, therefore, have no object. This division of the urethra terminates the first stage of the operation, and is performed by means of a bistoury.

Then having the groove of the staff thus completely exposed in the perineum, you adapt to it the beak of the instrument which you employ for making the opening into the bladder. Various instruments are employed for this purpose; and the one, perhaps, most commonly used, is called a cutting *gorget*. Formerly this instrument was made with a blunt edge, and employed only as a director for introducing the forceps into the bladder; but it struck some operators that it might be advantageously used for making the opening into the bladder itself; a sharp edge was therefore given to it, and hence it was called *cutting gorget*. This gorget has a beak, as it is called, which fits into the groove of the staff; and when you have exposed the groove as I have already described, you put the beak of the gorget into it, you move it a little backwards and forwards to satisfy yourself that it is in it, and you then take into your own hand the handle of the staff, which had before been held by the assistant. In the former part of the operation, you had required the use of both hands, in order to make the incision into the groove of the staff, and to feel that you had got into it; but when you have got the beak of the gorget inserted there, you take the staff into your own hand, and move it in such a manner as to keep it in a certain position with reference to the axis of the bladder, moving the other hand with the gorget gently along, so that this may be confined to the groove of the staff wherever it may be. Now you will immediately perceive, if you hold the staff in the axis of the bladder, and move the gorget steadily onwards, the latter will necessarily divide the urethra, the side of the prostate gland, and the neck of the bladder. That portion of the gorget which is situated to the right of the beak, has a cutting edge; it is, in fact, a knife of a particular shape, and in moving it in this way, you cut whatever comes in contact with it; thus you make a lateral division of the urethra, of part of the prostate, and of the neck of the bladder, to an extent corresponding to the breadth of the gorget. If you want to make a larger division, you must use a larger gorget; the

lateral incision will always correspond to the breadth of the instrument. When you come to introduce the gorget, your object is to carry it, as nearly as you can, into the centre of the bladder; with this view, and that you may avoid wounding any parts that are not required to be cut, you take the staff into your own hand; you depress the handle, and thus elevate the point; by carrying up the handle, you make the groove side press against the inferior part of the bladder and the rectum: you must combine the movements of the gorget with those of the staff, and in order to give the beak of the former the proper direction, you must depress the handle of it when you depress the handle of the staff. When you have carried the gorget into the bladder, it then slips off the staff, and you feel that the two instruments are no longer in contact.

The proceeding of introducing the gorget along the staff into the bladder, is by no means a very difficult one; the only circumstance of difficulty is, that you have got to keep the two instruments in exact contact with each other, and therefore persons adopt the practice of pressing the gorget against the staff, but the effect of that is that the gorget does not run on quite so well. If the instruments be very highly polished, you scarcely feel that they are in contact, and there is thus a kind of hesitation produced when you are operating on the living body, and the instruments are out of sight. When you are looking at them, nothing is more easy than to move them along in contact; but if you look another way and move them, you do not find it quite so easy; yet it only requires a little consideration and coolness to do it with the same facility in the body as you might be able to do it out of the body. You must bear in mind always the direction of the axis of the bladder; consider the importance of carrying the staff and the gorget in such a way that their direction may correspond with the axis of the bladder; take great care not to place them in such a position that there can be any risk of wounding the rectum. The rectum lies very closely in contact with the bladder; and if you introduce the instruments in a direction in which the gorget will press downwards, it is by no means difficult to wound it. The rectum is connected to the bladder only by a little loose cellular membrane, and if you carry the staff so as to press on it strongly, and carry in a sharp cutting instrument upon it, under such circumstances it may very easily be wounded.

If you use the gorget, I do not know that you can employ one of a better form than that I now shew you, in which the cutting edge is directed a little outwards and downwards. It is not quite lateral, but it is a little inclined downwards from a straight line, according to the direction of the instrument.

There are other modes of opening the bladder besides cutting into it with the gorget. You may use a knife for this purpose; in truth, you may cut into the bladder with the same knife with which you make the division of the integuments, and expose the groove of the staff; you may carry the point of that knife onwards into the bladder, although it is not very well adapted for the purpose, for the sharp point of the knife would stick against the groove; therefore a beak at the end of the instrument is better, and if you use a knife, it will be convenient to have a knob at the end of it, in order that it may be easily carried into the bladder along the staff. This is an instrument of that kind [shewing it]—a long slender knife, with a beak—and this was employed by the late Mr. Thos. Blizard, of the London Hospital, an operator of great celebrity and dexterity. The beak of this instrument slides along the groove of the staff, and thus you carry it into the bladder, and divide the neck of it and the prostate gland, by moving the instrument a little downwards and outwards. The gorget makes the cut as it enters the bladder; but this narrow knife cuts in coming out. The gorget necessarily cuts to a certain breadth as you push it in, owing to the width of the cutting edge; but if you employ an instrument of this kind, the breadth of the cut depends on the mode in which you move the instrument. This is Mr. Blizard's knife, adapted for the purpose. For an adult it should be longer, broader, and considerably stronger, than what I now shew you, which is the instrument for the young subject.

Various other knives and gorgets have been invented by different persons, who have fancied that some particular construction or shape of the cutting instrument would obviate the difficulties which they met with, but the multiplicity of gorgets and knives, and other instruments for cutting into the bladder which now exist, is a clear proof that an instrument that will answer under all circumstances is not yet discovered; indeed I believe that the secret of success must depend on the hand that directs it, and not on the instrument itself. There is no doubt that a person who has a good knowledge of the parts and organs that are to be divided, may make an opening into the bladder, and extract the stone with almost any instrument that has been devised; and I believe that without that knowledge, none of the instruments that exist will enable a person to do it easily, safely, or effectually. For my own part, I have always been in the habit of using Mr. Blizard's knife. I do not pretend to say that it is preferable to all others, but at all events it is simple, and the operation is easily performed with it. I should be inclined either to use it, or that kind of gorget above described. I

should say to persons who have not practised the operation, nor considered very accurately the parts, that the gorget may be the safest instrument in their hands. It cuts the prostate and neck of the bladder to a determinate extent, and is, therefore, a more certain instrument than the knife; but for my own part I prefer the latter.

Then having made the incision of the prostate and neck of the bladder, you introduce your fore-finger along the staff into the bladder, and feel for the stone with it. Having done this, you remove the staff from the urethra, and introduce the forceps along your finger into the opening you have made; then expanding the blades, you move them about, and if, on bringing them together, you find that you have included between them the stone, you have now only to draw it out of the bladder. When the stone exceeds a certain size, you occasionally find considerable resistance to its extraction, so that before you have performed the operation a few times, when you begin to draw the stone out, finding that it does not come away easily, you begin to suspect that you have got hold of a piece of the bladder; but the truth is, the sides of the bladder, the prostate, and the soft parts situated between the bony arch, necessarily oppose a resistance to the extraction of the stone. You have only got a certain space between the bones for the removal of the stone; this space is occupied by the urethra, the muscles that surround it, the adipose and cellular substance and other soft parts, and you have to draw it through an opening you have made in half that space; you have to extract a stone perhaps of considerable size, with the addition of the thickness of the blades of the forceps. You will immediately see, therefore, that you cannot make an opening in those parts sufficient for a stone beyond a certain size to come out with care; there is not actual mechanical space for it, even if you could get the whole of that which exists between the bones. I have tried all kinds of instruments on the dead body, so as to see the mode in which the prostate and neck of the bladder have been divided, and I have never found that the incision has gone farther than was necessary. Now if you compare the size of the opening that can thus be made with the ordinary size of stones found in the bladder, you will immediately see, that in dragging a stone through an opening there, you must accomplish the removal of it by considerable distention and partial laceration. No doubt the violence that is thus offered to the parts, and the inflammation which it causes, are the principal sources of the mischief which takes place afterwards, and the source of the danger to which the patient is exposed; but it is inseparable from the operation.

In drawing the stone out, when you come

to experience resistance, you should hold it firmly, move the forceps from side to side, then pull it gently, performing this distention and laceration of the soft parts with as little violence as will just answer the purpose; move the forceps from side to side, then stay a little, giving an opportunity for them to yield without any very violent or forcible proceeding. You should observe also, in doing it, to draw the stone as much as you can towards the lower part of the pelvis, where the interval between the bones is the widest. If you draw upwards, you attempt to extract the stone through the narrowest part of the arch, and you will find that the forceps in a certain state of extension will not come through this part, while if you depress the handle, they will come with great facility. The patient is laid on his back during the operation; therefore in drawing the stone out, you should draw almost perpendicularly downwards; if you elevate the handle of the forceps, you bring the stone against the pubes, and opposite to the narrowest part of the bony arch.

If you have removed one stone, you may introduce your finger, and see if there are more; and if the stone should have given way, and broken into fragments under the pressure of the forceps, you may remove a part of those, and still find that there are others remaining behind. Under such circumstances, it is expedient to throw in a little warm water into the bladder with an ordinary glyster-pipe, so as to clear it out.

This, then, is the most common way of performing the lateral operation of lithotomy; it is not, however, invariably or universally adopted; for instance, of late, some gentlemen have preferred using a straight staff, or a staff very nearly straight, with a slight curvature at the end of it. If this staff is used it is necessary to take great care to hold it in such a way that it may be directed towards the axis of the pelvis; for if you carry it more depressed, the cutting instrument would be very likely to wound the rectum and the neighbouring parts. If the straight staff is used, the handle must be brought considerably down, indeed nearly parallel to the thighs of the patient, to admit of the cutting instrument being carried safely and easily into the bladder.

There is an instrument which has been frequently employed for making an opening into the neck of the bladder and prostate gland, called by the French *Lithotome caché*. It consists of a narrow blade, contained in a sheath, formed with a beak at the end, which can be introduced into the bladder along the groove of the staff; then, when it is in the bladder, you force it out of the sheath by a kind of lever, and draw it straight out, so that you make a horizontal incision through the prostate and neck of the bladder. Here you can make an incision limited in extent,



as you do in using the gorget, but in this instance you make it in coming out, instead of in going in. The extent to which the blade starts out of the instrument is determined by the position of the screw in the handle; if you carry the screw to a short extent, then the blade only comes out a short way; if you carry it further, then you increase the extent to which it comes out. This instrument has been a good deal used in France, and I believe sometimes in England. It comes out with great facility; the knife being sharp when you draw it out, it passes so easily that you can hardly fancy you have made a cut with it at all.

*Bilateral Operation.*—A mode of proceeding has lately been adopted and extensively practised by Baron Dupuytren which he calls the bilateral operation; it is executed by means of a double lithotome caché. In this method the first incision is made in a different direction from the external opening which is made in the lateral operation; supposing this to be the anus, [Mr. Lawrence here referred to a diagram] the direction of the incision is semicircular in front of the anus, going equally on the two sides of the raphe of the perineum; in the lateral operation you cut only on the one side; but in this bilateral operation the incision is semicircular, the ends of it being turned towards the anus, and the convexity towards the pubes. The groove of the staff is exposed in the situation which I have before mentioned, just below the bulb of the urethra, and then the instrument is passed in by means of the staff into the bladder. When it is there it is turned, so that the convexity is directed upwards, and the concavity downwards; then you press upon the two handles by which you open the instrument; it is exactly similar to this simple lithotome caché, except that there are two blades, one on each side, which can also be limited in the extent to which they start out, and which make an incision through the neck of the bladder and prostate on each side, as you withdraw them. This operation has the advantage of making a freer division of the prostate and neck of the bladder—of making a larger opening than is usually practised for the extraction of the stone. It might be usefully employed where we had reason to expect that the stone was large. You can readily understand that the stone will come out more easily through an incision of this kind, than through one of only half the extent. It has also the further advantage, that the opening into the bladder is in the middle line, so that although it is beyond the usual size it is not extended in any direction where an artery is likely to be wounded. In the middle part of the perineum the vessels are small, and in fact there are no large vessels about there, except along the inside of the ramus of the ischium and pu-

bes, where the trunk of the pudendal is found, and there is no risk of wounding that or any important vessel by this incision. I believe this bilateral operation has been found to answer extremely well in the hands of Baron Dupuytren, but like the recto-vesical operation, it has not been practised in this country. In cases where a large stone is expected, where the prostate is likely to be enlarged, and where you want a freer incision than ordinary, I think this operation might be employed with advantage.

After the operation for lithotomy, the urine flows out through the wound—the whole of it passes in that direction for a certain time; but in proportion as the wound heals, it begins to pass through the urethra, and to take its natural course. The patient sometimes experiences considerable uneasiness after the operation, and before the urine begins to flow through the wound; the sides of it, perhaps, are agglutinated by the blood that may have been discharged; he wants to make water, and cannot pass it; the bladder becomes distended, and very great uneasiness is the consequence, until the accumulated water forces a passage for itself. This inconvenience has been so considerable as to induce some surgeons to introduce through the wound a small canula, which may give a passage to the urine, even if the sides of the wound should become agglutinated. The length of time that elapses before the urine passes by the natural channel, differs in different instances; generally, provided every thing has gone on favourably, some water will begin to pass in the natural way in about a week; and in children it will begin to come by this way still earlier. In the last instance in which I operated on a child in the hospital, he began to make water on the third day; and I think I recollect one case where it came through the penis from the time of the operation, none passing through the wound, the sides of which, I fancy, adhered closely together. In an adult, as I have said, it generally begins to pass in a week from the time of the operation, and at the end of a fortnight nearly the whole of it will pass through the penis.

The after treatment of patients who have undergone the operation of lithotomy is often a matter of considerable importance. Inflammation of the bladder may come on—the cellular membrane surrounding it and the peritoneum may inflame: in the latter case, active antiphlogistic treatment—the free abstraction of blood—the application of leeches and fomentations to the abdomen, with analogous measures, must be vigorously adopted.

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## LECTURE LXXXIX.

*Lithotomy in the Female—Dilatation of the Urethra—and of the Rectum—Fissure of the Palate—Imperforate Vagina—Malformation of the Feet and Hands—Modes of applying Counter-Irritation—Concluding Address.*

THE operation of lithotomy is very rarely necessary in the female. In the first place stone is uncommon in women. If calculous concretions descend from the kidneys into the bladder in the female, they pass out through the urethra, the short course of which, and its large size, are particularly favourable to their escape, so that it very seldom happens that any nucleus remains in the bladder of a female so as to constitute the source of a future calculous concretion. Again the female urethra is susceptible of dilatation to a very great extent—to a much greater extent than you might *a priori* have expected. You can enlarge the female urethra so as to pass in your fore-finger, or even a couple of fingers, and consequently so as to admit of the introduction of a pair of forceps into the bladder, with which a stone of considerable magnitude—a stone, we will say at least as large as the end of the thumb, and probably larger, can be grasped with the forceps, and extracted without any violence. Mr. Weiss, an ingenious instrument-maker in the Strand, has devised an instrument with two branches that can be introduced into the urethra, and then expanded by the mechanism of the instrument, and thus, within a short time, a sufficient dilatation can be effected for the introduction of a pair of forceps, and the extraction of a stone of a large size. In the female the operation of lithotomy is very rare, therefore; and if, in any case, it becomes necessary, it is very simple. A straight sound, and an incision made by any common knife carried along its groove in the direction of the lateral and inferior part of the urethra, will divide the canal sufficiently for the purposes of the operation.

*Dilatation of the Urethra—and of the Rectum.*

The same practice of dilating the urethra may be had recourse to in those instances in which extraneous substances have been introduced into the bladder through the urethra, and in such cases you may adopt just the same method for removing those that you would for extracting a stone from the bladder.

I have already had occasion to speak to you respecting the presence and removal of extraneous substances in various parts of the body. I have spoken to you of this as regards the eye, the ear, the air-passages of the lungs, the œsophagus, and now with respect to the female urethra. I may make the same observations respecting the rectum, as with regard to the

female urethra; that is, in the case of extraneous substances either introduced from without, or which have descended from the intestines, that you can dilate the anus to a size that will admit of the introduction of several fingers, so as to extract with great facility any body that may be lodged in the rectum. When you introduce a finger into the anus, you seem to pass through a tube of small size, barely admitting of its introduction; but you find that after it has been in a short time the resistance made by muscular contraction diminishes, and that it becomes loose, so that you can introduce a second finger, very soon afterwards a third, and perhaps a fourth, and thus dilate the rectum in a manner that would admit of the introduction of forceps of a considerable size, or any other instrument you might be desirous of using for the purpose of extracting the foreign substance.

*Fissure of the Palate.*

I have had occasion to speak to you respecting the malformation of the lip, which constitutes harelip. A similar malformation is sometimes seen in the palate: you may either have a fissure extending through the bony and the soft palate, or the former being entire, you may have a fissure of the latter alone. Where the fissure extends both through the bony and the soft palate, we cannot adopt any means of remedying the deformity. You cannot bring together the sides of the bony fissure, and if you cannot do that it would answer no purpose to unite the fissure of the soft palate. When the fissure, however, exists in the soft palate alone, it is possible to perform an operation which, in respect to its principle and some of its details, is similar to that which is performed on the hare-lip. You must cut off the edges of the fissure so as to bring the margins into the state of a recent wound; you then draw them together by means of sutures, and thus you can unite the fissure of the soft palate. This operation has been performed several times in France, by M. Roux, the surgeon of the hospital called La Charité, a very dexterous operator, and he has described it in a small pamphlet called “an *Essay on Staphylo-raphe*” that being a compound Greek term denoting suture of the palate. He seems to have met with a great many of these cases, and to have succeeded with many in which he performed the operation for removing the defect. I have seen cases of this description, but they have not been under circumstances in which either I have thought fit to advise, or the patient been willing to submit to, an operation. The consequence of the defect is chiefly observable in the voice of the individual; it produces an imperfection of the voice—an imperfection sometimes very considerable, and of the same kind as is produced in an individual who is unfortunate enough to lose a considerable part of the palate by

ulceration. This imperfection, however, is not very great in all instances, so that there are cases in which persons are not willing to undergo a painful and troublesome operation for the purpose of getting rid of what they consider so slight a deformity. I have therefore not seen the operation of staphylo-raphe performed, and have no observations to make from my own experience on the subject. One instance in which I met with a fissure of the palate was in a female who came to the hospital with disease of the eyes. In the course of examining her I observed that her utterance was rather peculiar in the answers she made to my questions; there was a peculiarity in the sound of her voice, and a singular movement of the *ala nasi* in speaking, which attracted my attention; and, as they were somewhat similar to what I had seen in cases of fissured palate, I asked her if she had any thing the matter with the roof of her mouth. She said, No. I asked her if ever she had any thing the matter with her throat? To which she again answered, No. However, I looked into the throat, and there I found a fissure completely extending through the palate, and dividing it into two parts; but the imperfection in this woman's utterance was not very great, and I therefore did not think it worth while for her to undergo so painful and disagreeable a proceeding on account of it; for, as you may easily conceive, to get rid of this imperfection by cutting the edges and bringing them together by sutures, a good deal of manipulation must take place, which must be very unpleasant. M. Roux states that the patient ought to be kept with the mouth shut, and without swallowing any thing, or even speaking, for three or four days; so that it is not a very pleasant proceeding. I have seen some instances where by adjusting a kind of apparatus an artificial palate has been made, and as much improvement in the articulation has been produced as could have been effected by the operation. I should therefore apprehend that the cases are very few in which this operation can be required, and they must be cases where the fissure is confined to the soft palate, and does not extend to the bones. In the majority of these cases, however, the deformity exists both in the bony and in the soft palate.

#### *Imperforate Vagina.*

In female children there are sometimes congenital imperfections, consisting of an unnatural union of the external organs of generation. The labia are sometimes united by their edges, so that the opening appears to be obliterated. Perhaps there is an opening just sufficient to admit a small probe either at the upper or lower end, and through this the urine flows out; sometimes the nymphæ adhere in this way. Now these parts are, in general, only superficially

united, and you can usually separate them with your fingers, or, at any rate, by the introduction of a probe or director, and dividing the perternatural union.

There sometimes occurs a more serious malformation of the internal parts close at the entrance of the vagina, which has commonly been called an imperforate hymen, and where this membrane completely closes the passage, instead of having at its upper extremity a semilunar opening into the vagina. The existence of this malformation becomes apparent at a certain period of time—after menstruation has commenced; for as the menstrual fluid cannot flow out, it gradually accumulates in the vagina and uterus, and ultimately enlarges these parts in such a way as to give the female the appearance of being pregnant; and this is the more deceptive inasmuch as the enlargement of the abdomen is accompanied with the absence of the usual monthly discharge. We cannot be surprised, therefore, that persons have occasionally mistaken the cause and nature of such enlargement, and have supposed females to be in a state of pregnancy who could not possibly have got into that condition. In these cases, when the existence of the malformation has been ascertained, the remedy is easy; you have to perforate the hymen—make an opening into it with a double-edged sharp-pointed knife; and in order to give it sufficient dimensions, so as to save the female any inconvenience afterwards, you should make a crucial incision, and then there will be no danger of the edges of the wound reuniting afterwards.

#### *Imperforate Anus.*

It sometimes happens that children are born without any anus; the formation of the alimentary canal is perfect, except that the large intestine is closed at its extremity. In some instances you find an external appearance just like an anus, and the only difference is, that it is closed; it seems as if the anus were formed—that all the essential parts existed, but that the intestine is closed at its extremity. In other instances the skin is smooth, without any mark; and in these cases the bowel sometimes terminates by a blind end a little way beneath the skin; sometimes at a considerable depth from it; sometimes it may open into the vagina, or into the urinary bladder; there are varieties of kinds of malformation of this. Now of these various cases, the only one in which we can render essential service is that in which the formation of the alimentary canal is complete, with the exception of its external opening; there we can make an opening by means of a double-edged sharp-pointed bistoury carried into the rectum, and by the daily introduction of the finger or a bougie, as the edges of the wound are healing, we may prevent agglutination till the parts have cicatrized. There are children who have



had an anus thus formed, who have grown up and have had the full command over the sphincter muscle, and done as well as those who have had a natural anus. In the instances in which we cannot see any anus, we are obliged sometimes, from the sufferings of the child or the importunities of parents, to dissect cautiously the situation of the bowel; if we feel a part of the blind end of the rectum distended with meconium, we may puncture it, and the child must take its chance of the future event, whether it will prove a permanent anus or not. In the more serious malformations of this sort, if we do not find the anus, or any appearance of it, within two inches from the natural situation, it is not advisable to attempt to penetrate any further.

#### *Malformation of the Feet and Hands.*

The kind of malformation which constitutes what is called club-foot, can only be remedied by mechanical contrivances; that is, by the adaptation to the foot of such mechanism as will keep it in its proper bearing, in respect to the bones of the leg, and these are applied with the greatest advantage in the earliest periods of life. At that time the bones of the foot are merely cartilaginous, and they easily give way under the application of proper mechanical means, such as can bring the foot and leg into their proper positions; but this is not the case at a more advanced period of growth when ossification has proceeded further. The management, however, of these cases generally falls to those fabricators of mechanical apparatus who make it their particular object, and I shall therefore say nothing further on the subject, than to urge the necessity of using the requisite means at the earliest period while the bony structure of the foot and ankle-joint remain in a soft and yielding state.

There are instances in which the fingers are preternaturally connected together at birth—web-fingers. The deformity is easily removed by separating the parts.

There are instances of supernumerary fingers—an extra finger or thumb, which are sometimes so connected as to be inconvenient, and to require removal.

#### *Modes of applying Counter-Irritation.*

Respecting the mode of accomplishing the various means of counter-irritation I have little to say, for really the making of issues, setons, &c. is so familiar that it is hardly necessary for me to enter particularly on the subject. I will only observe that an issue may be made either by pinching up a fold of the skin,—pushing a knife through, then inserting peas or glass beads in the wound; or by the application of some caustic substance, especially the potassa fusa: you may take a stick of pure potash, rub it on the surface of the skin, and thus de-

stroy it in a sufficient extent to admit of the introduction of peas or glass beads, or any other substance you may adopt, for the purpose of keeping the wound open. Perhaps a less objectionable mode of using the caustic, is where the potash is mixed with as much soap as will make it like a pretty firm paste; a thin layer of this is spread on the part previously surrounded with sticking-plaister, to prevent the action of the caustic extending further than is requisite; cut a hole of the size of the intended issue in a piece of doubled plaister, lay this on the part, and then fill the open space with the caustic paste, let this remain for four or six hours, then remove it, cover the parts over with a poultice, and wait for the regular separation of the eschar which is thus produced. The issue thus made may be easily kept open; the more ordinary way is by inserting peas, beans, or glass beads, into the wound, confining them by means of sticking-plaister, and renewing the dressing daily. This method is sometimes a painful one; a difficulty is experienced in keeping these substances in, and maintaining the ulcers of the requisite extent. You may, however, keep open an issue for a considerable time without these substances, merely by touching the surface occasionally with the caustic potash. There are two modes in which setons may be made. In the ordinary way you use a broad, flat-pointed knife, with an eye at the end of it, called a seton-needle, and in which you place a skean of silk, you then pass the seton-needle armed with the silk through a fold of the skin, cut off the needle, and confine the silk in its situation. Now the discharge produced from the seton lodges in the silk and becomes offensive; and a seton kept up in this way is very apt to be attended with a disagreeable smell; so that on the whole a more cleanly way is to employ seton tapes made of elastic gum, which are more convenient and less offensive, as they are easily sponged clean every time you dress the issue. This tape is passed just in the same way as the silk, except that the end of the needle is formed somewhat differently, with a slit instead of an eye to receive it.

It is hardly necessary to say anything about the mode of applying the actual cautery, for it is so little used in this country that surgeons hardly like to propose it, and I fancy that patients would hardly be inclined to submit to it. I do not suppose that the actual cautery is more painful than some things we are in the habit of using, but people are guided a good deal by their imagination in things of that kind, and they will object very positively to one remedy, while they will bear a much greater quantity of pain in another way. The actual cautery might, however, be employed with advantage in some cases. It is a powerful agent; and is perhaps too much neglected in this country,

in the same degree as it is too much employed elsewhere. The moxa is merely a species of the actual cautery. The mode of applying it is very simple: portions of cotton are rolled up compactly in a cylindrical form of various sizes; one of those prepared cylinders is to be held to the part, having been previously lighted, and a current of air directed upon it from a syringe, till the skin is entirely destroyed; till in fact it is burned black, as it were into a perfect coal. The action of the fire is not precisely confined to the spot immediately covered by the moxa, for you will see that, to a considerable extent of the surrounding skin, redness is produced, which is wrinkled and drawn together by the contraction of the eschar. I consider certainly, the application of moxa to be a more powerful remedy than the issue or seton. The portion of skin which is destroyed is gradually separated, and an ulcer is left resembling that which is produced by the caustic; but the application of the fire produces a more powerful action or revulsive effect than that of the potash. Although the moxa is similar to the seaton or issue, yet I consider it on the whole to be more powerful.

I have nothing particular to say to you respecting acupuncture, an operation that has been derived from the Chinese or Japanese, to whom I suppose we are not indebted for any other surgical ideas; but in those countries the pricking of parts of the body with needles is one of the most general and familiar operations. It has been tried lately in this and some other countries of Europe; and great benefit has sometimes been said to have been derived from it in obscure painful affections—in rheumatism, and in other similar cases where probably there has been no serious disease. The application of the remedy is very simple; it merely consists in introducing the point of the needle by a rotatory motion to a certain depth. It was some time ago considered a fashionable practice, but I believe it has now gone out of fashion; we do not now hear much of diseases being treated by acupuncture.

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I have now, gentlemen, concluded this surgical course of lectures, having I believe performed what I engaged to do in October last; at least I find that I have exactly performed the engagement so far as it regards time, for I stated that the course would occupy seven months: the first lecture was delivered on the 1st of October, and I believe this happens to be the 30th of April, so that we are quite correct in point of time. As to manner:—of course you had a right to expect, and it would be to my interest, and I am sure it was my desire, to perform the duty as well as I could. You are however aware, or if you are not I should

wish you to bear it in mind, that this is the first attempt I have made at giving a full course of surgical lectures, consequently it has been necessary for me to treat in this course of many subjects on which I have not lectured before.

#### *Concluding Address.*

Will you allow me, gentlemen, before taking my leave of you, to say to those who may have concluded that portion of time which they mean to devote to their studies in London, that I trust they will not consider their education completed, and that their further attention is not required to those points of professional knowledge which are necessary to qualify them for entering into practice. It is impossible, I conceive, for any person fully to convey to others by oral description the knowledge he may happen to possess on a particular subject. You cannot convey knowledge from the mind of one person into that of another, as you can pour fluid out of one vessel into another. The acquisition of knowledge, so far as it can be of real service in a profession like that of medicine, requires great activity of mind. In listening to lectures and other discourses the mind is passive; you can hear easily enough what is delivered, but in order to qualify you for the duties of the profession you must actively exert your own faculties, and in some respects, therefore, your education only begins at the time when most persons think it is finished. I conceive, indeed, that the only valuable information a man obtains, is that which he himself procures. It is the direction of his own energies to the subject in question which alone can lead him to gain the kind of knowledge that will be of real use to him afterwards for practical purposes in his profession. In this respect we may really say that the education of a member of the medical profession is never at an end—its duration is concomitant with the existence of his life. As long as he continues to exercise his calling—as long as he has opportunities of observing the phenomena of disease, and of observing the effects which a certain course of treatment produces on it—so long he increases his stores of knowledge, and renders himself more and more capable of conferring those services on the public which are expected at his hand. This, in my opinion, constitutes a very great advantage in our profession. There are subjects which interest always before us; in fact, the whole of our active duties lead us to that improvement which, while it calls into exertion the faculties of our minds, at the same time increases our power of doing good to others, that is, of discharging those duties which particularly belong to our own profession. I do not know any kind of profession, or any occupation, which in this

way is a more valuable exercise of the mind, than the medical, or which in respect to its effects on the individual himself is more salutary; while, on the contrary, I cannot conceive any situation that can be a more unenviable one, than for a person who has begun the exercise of his profession, or who is going on with it, without a consciousness that he has done every thing in his power—and continues to do every thing in his power—to increase his practical knowledge, and thereby to gain every means of rendering assistance to those who place themselves under his care.

It really does appear to me, gentlemen, that if in the care of any important case a person should feel that he does not understand it, and that the patient, perhaps, is inefficiently treated in consequence of his ignorance,—I say I conceive that it is impossible for such a person to enjoy peace of mind, or find that repose when he lays his head on his pillow, which is necessary, after the active duties of a profession like ours.

[Mr. Lawrence then retired from the theatre amidst the most enthusiastic cheers.]

#### DR. VENABLES ON VINDEK'S ANSWER, &c.

*To the Editor of the London Medical Gazette.*

SIR,

ALTHOUGH I do not consider myself bound to defend myself against the invectives of every silly writer, who, fearful of hazarding his reputation, adopts a fictitious cognomen, yet, upon the present occasion, lest my motives might be misinterpreted were I to remain silent, I beg to submit to you a few remarks upon the subject, and shall then leave it to the profession and yourself to determine how much honour Vindex has lost by substituting a fictitious instead of his real signature.

Vindex commences by stating, “that he has read a *well-written criticism on the medical treatment of the poor fisherman*,” &c. If it be a well-written criticism, what need for Vindex's animadversions—where the necessity for his defence, or for his strictures, on my exposé? If Vindex had read my paper with the slightest attention he must have seen that a critique on the medical treatment formed little or no part of my object, and that my remarks were introduced incidentally when stating the evidence, lest by being silent I might have been supposed to sanction the rules of practice laid down. Thus

Vindex avoids the main body, to attack a few stragglers in the rear; and in this he has shewn a proper degree of prudence, for even what he has undertaken appears to me to be as much, if not more, than he is equal to.

Vindex commences his attack upon me by the following pithy objection: “I am strongly inclined to believe that he (Dr. V.) has overlooked the directions Mr. Guthrie gives about the administration of brandy to wounded men, where there is great exhaustion of the sensorial powers (see his work on Gun-shot Wounds).” I was not aware that Mr. Guthrie had written a Treatise on Gun-shot Wounds; but if he, in the hurry of the moment, has expressed himself so absurdly, he cannot but feel highly indebted to Vindex for his attempt to give still greater notoriety to what I am sure he would willingly expunge from his pages. I know not what Mr. Guthrie may have written, but suffer me to declare what, if I am correctly informed, he has expressed—his decided disapprobation of the identical treatment which Vindex so gallantly defends, and he would only *not* go the length of declaring it questionable which contributed most to the locked-jaw. But as Vindex has—I will not do him the credit to say *intentionally*—misunderstood me, he may probably have done Mr. Guthrie similar honour. But allowing Vindex all the advantages of Mr. Guthrie's able assistance, to what does it amount, or what will it avail him, or those he defends? Where there is great exhaustion with languid vital action, the exhibition of a weak stimulus, in moderate quantity, will restore a sufficient degree of action to the sinking powers. In all this, or in any part of Mr. Guthrie's work, does he find the symptoms of this exhaustion to consist in the capability of sitting up by the fire, talking and conversing with those about him, and in the full exercise of all his physical powers? Or has he found it laid down in Mr. Guthrie's work, with such indications of exhaustion, and with a swelling and rapidly inflaming arm, after a gun shot injury, that three glasses of brandy is proper and judicious treatment? Now let Vindex tell us in what part of the evidence great exhaustion of the sensorial powers, as he is pleased to term it, is proved. It is true that the witness said there was great faintness; but do not



the facts admitted contradict the opinion given by the witness? Allowing Vindex and his friends every possible advantage, and that there was great exhaustion of the sensorial powers, with faintness, &c. how could three glasses of brandy be got into the stomach in such a state without the assistance of the pump? and when introduced, were they not calculated to extinguish rather than restore languid vitality? Thus Vindex may learn that it is not always necessary to see a case to decide whether it has been treated "*secundum artem*."

Vindex is equally unhappy in his allusion to the capital operations in surgery, and betrays upon this subject the same gross ignorance. He asserts with a dogmatical, though somewhat triumphant effrontery, "that there is no practice more common than to give stimulants at an operation, with the view of pointing out to the operator such vessels as may require a ligature." In the first place, I deny his general proposition. The great arteries are always secured immediately after the operation, and before any stimulus is given. The next process is to loosen the tourniquet, and then, if there be any hæmorrhage, to secure the bleeding artery. If no farther hæmorrhage appears, then about half a glass of wine, diluted with water, is given, to recover the patient from the languor which must naturally result from the removal of a large portion of the animal body. But does Vindex mean to say that three glasses of brandy in such circumstances would be justifiable practice, and that, if hæmorrhage did not succeed, it would prove to the operator that he had not divided the main artery? If these be Mr. Guthrie's dogmas, I do not regret never having seen his book; but I should advise Vindex to examine this work more closely and attentively: he will learn that of which he now seems to be perfectly ignorant. I will now explain to Vindex the *rationale* of the practice under cover of which he has been making a sally to fire a few random shots. Amputations are generally performed to remove a diseased part, and there is generally a considerable retraction of the divided vessels, so that their open extremities are drawn deeply within the surrounding parts, and it is not always easy for even the most accomplished anatomist to discover the minor arteries and draw them out from their hiding

places: in such cases, too, some of the small arteries leading to the diseased structure become enlarged, and though in the healthy state wounds of them might require no particular attention, yet when so enlarged they may become a source of a troublesome and even dangerous hæmorrhage. Therefore, the object of exciting a sufficient re-action is to enable the surgeon to discover vessels which may have become enlarged from disease, in sufficient time to finish his operation within the limits of a reasonable period; and that the patient, after suffering so severe an operation, may not be kept out of bed or exposed longer than is absolutely necessary and consistent with his future security. Were it not for the purpose of expediting the operation, no stimulus would be given, and, generally speaking, the operating surgeon would wait for natural or spontaneous reaction.

The next observation of your correspondent is as unintelligible as all the preceding ones. He states—"Now it appears that was the case on the first occasion of the brandy being administered; and may not the rules laid down by Mr. Guthrie have authorised its repetition?" It is difficult to understand Vindex here. "What was the case, or to what antecedent, does he refer? Is he attempting to establish an analogy between a surgical operation and a gun-shot wound? Is it the perversion of his own imagination, or is it a sly piracy from Mr. Guthrie's pages? Does Vindex mean to assert that half a glass of wine, diluted with water, given during a capital operation, to enable the surgeon to ascertain whether any, and what small vessels may have become enlarged by disease, and which would escape attention unless they were forced to spout out blood by the simple and comparatively innocent means above noted, is a principle to justify the administration of brandy in such reprehensible quantity in the case of a gun-shot wound? Or does he mean to assert that the exhibition of half a glass of wine, diluted with water, for a specific purpose, when little or no inflammatory action is dreaded, justifies the administration of so powerful a stimulus, in such inordinate quantity, without any legitimate object, when the only evil to be apprehended was violent inflammation?"

The thrice-told objection, "of its being most unjust in any man to impugn

another's practice, without having seen the patient prescribed for," seems to me hardly deserving of notice. Does Vindex mean to say that any man, with common pretensions to professional knowledge, cannot undertake to say whether the principles of treatment avowed are at variance with all established rule? or whether the deviation has been justifiable or not under the circumstances stated? But Vindex seems to forget that it is not the private practice of any individual that I am impugning, but that I object to putting upon public record principles of therapeutics at variance with all established rule, without any adequate explanation, or even any attempt at justification, and which too are wholly unsupported by either reasoning or experience.

The next subject to which your correspondent adverts is, the course of the ball. Upon this he seems to be alike unfortunate. Does he know that "the tendon of the biceps" is on the fore part of the elbow-joint, and plunges deeply to be inserted into the tubercle of the radius. Captain Moir was in front of Malcolm when he fired, and the witness, Mr. Dodd, surgeon, of Stanford-le-Hope, was the first professional gentleman who visited the patient, and saw the wound. He stated that the ball penetrated on the *inside, a little above the elbow*, and came out on the outer and back part, a little above the olecranon. If Vindex knows any thing of the doctrine of projectiles, he must know that, though their direction may be changed from a right line, bullets never run *directly backwards*. If the object be too hard for penetration, if not turned off they become flattened, and fall. I have taken the matter as described by Mr. Dodd, and if Vindex were in court at the trial, he must remember Mr. Dodd's own description, and that it is the foundation of my view, and that I have not formed any hypothesis of my own, but merely adopted the statements of the principal evidence himself. With respect to a wound of the humeral artery being the cause of the hæmorrhage, it would be not only irrelevant to the present discussion, but unfair towards the parties criticized, to call in to my aid the information which I may have derived from other sources than their own public statements. I merely stated, that what was advanced as proof of the main

artery having escaped was no proof at all, and Vindex has neither confuted me, nor driven me from my position.

I maintain that hæmorrhage is a very rare consequence of gun-shot wounds, and if your correspondent will refer to Mr. Guthrie, or his lessons, he may then perhaps learn, that legs and arms have been shot clean off, and yet no hæmorrhage has succeeded for hours afterwards, even though the wounded have intoxicated themselves during the interval by drinking brandy or some other kind of ardent spirits. Thus the period which has elapsed since the army was at Valenciennes, where, by the by, there was no opportunity of meeting with gun-shot wounds, may have in some degree impaired, it has not wholly obliterated from my memory the practical lessons which I was taught at Salamanca, the Pyrennees, Orthes, the Nivelle, Bidasoa, Toulouse, &c. besides a whole host of other places, where opportunities for observing gun-shot wounds presented as regularly as the morning dawn.

It is almost unnecessary to notice what is stated about John Hunter: if Vindex will examine Dr. Hennen's book, or Mr. Guthrie's, and the various works upon military surgery, he will find as extraordinary cases as that related by John Hunter. The concluding sentence, however, of the paragraph requires some comment, because it inculcates very unsound doctrine, which prudently has not been sanctioned by any other than equivocal authority:—"The course, therefore, which we have assumed, that the ball in the case under consideration had taken, is not at all problematical; hence the profuse hæmorrhage, and the propriety of the loose application of the tourniquet."

Now if the hæmorrhage had been profuse, and the artery wounded,—why not take it up immediately? for the longer it was delayed, the greater the difficulty as well as the danger. But if the surgeon were timid—and I should be the last to blame a man for shrinking from that to which he felt himself unequal—and that the hæmorrhage was profuse from the wound of a large artery, how the *loose* application of a tourniquet was calculated to suppress it, remains for Vindex to explain, as well as to account to his friend for charging him with having sworn to a palpable falsehood in a court of justice. Mr. Dodd swore that the artery was *not*

wounded; Vindex, in defence of him, asserts that it *was*, and still further, that a loose tourniquet is the proper mode of suppressing profuse hemorrhage from a wounded humeral artery. I now ask merely for information, whether I am not as fully warranted in impugning erroneous doctrines and principles of practice sanctioned by an open avowal in a court of criminal law, and so far calculated to mislead, at least unprofessional persons, as Vindex, in his gallant and unpremeditated defence, to charge his *protégé* with ignorance of the facts of a case, which Vindex himself had not seen, and what is still worse, charge him with a misrepresentation upon oath?

When Vindex states that "there does not appear to be any palpably bad practice in the treatment of this case," though it does not tend to raise his friends in professional estimation, yet it serves to display one of the numerous contradictions which mark the imbecility of this defence. However, with all his incaution, he is prudent enough not to commit his own character by sanctioning it with his name. How will Vindex reconcile his reproaching me for having blamed the treatment without seeing the case, and almost at the same moment he, under equal disadvantage, asserts that it has been judicious and correct?

When I read Vindex's statement of what appeared to him to have been the grand error, "that Captain Moir's family did not send for Dr. Venables immediately after the unfortunate accident, or to London for some experienced military surgeon," I was tempted at first to look upon the former part as a sarcastic sneer rather than a compliment, were it not for the conclusion. But persons less acquainted with me than Vindex seems to be would hardly have proposed calling so obscure an individual as myself into public notoriety, especially as I am surrounded by persons of much superior claims to professional consideration. I will tell Vindex, that though I had not the good fortune to be selected, yet Captain Moir, unconscious of Malcolm's death, was, at the very moment of his arrest, on his road to London, to engage the professional services of Mr. Basset for the deceased.

With respect to Vindex's conclusion,

I must observe, that it is surprising that any one who professes to have read my paper can for a moment doubt, or ask me to explain, my motives for its publication. The paper itself contains a plain and intelligible answer to all such inquiries. What! is it not enough that even, according to Vindex, one man's life has been sacrificed to ignorance "through the error of Captain Moir's family;" and that justice has been misled through the culpable negligence of those who undertook to assist in its administration, and the severity of the laws fatally directed by the advancement and unquestioned admission of opinions which have not even the shadow of a foundation, either in reasoning or experience.

But how is it that Vindex passes over in total silence the principal object of what he styles my critique? He passes, without the slightest notice, the very essence of the paper—namely, to shew to the government and the public, that, when the administration of justice is concerned, the professional opinions of those who are either too idle or too ignorant to establish them upon some certain foundation, and who leave matters in uncertainty which could have been ascertained beyond the possibility of doubt, should be thoroughly sifted; and if admissible at all, under such circumstances, in a court of justice, should be received with jealousy and adopted with caution. Vindex himself gives one possible, or probable, solution of the course of the ball; he at the same time admits that mine, though directly contrary, is equally rational; and, perhaps, if one hundred other opinions were taken, they might be all different, and yet equally probable;—and yet, with all these glaring inconsistencies, and the penal sacrifice of a fellow-creature staring him in the face, Vindex asks, what ostensible motive could have induced me to publish my paper? Upon evidence so questionable—admitting of such variety of solution, and such conflicting interpretation—justice has been outraged, and an unfortunate though rash man has suffered the extreme penalty of the law, his character stigmatised with the odious imputation from which it has been my humble but anxious endeavour to relieve it. If Vindex had shewn that my conclusions with respect to the opinions advanced



upon this trial, and their invalidity as evidence to justify conviction, were erroneous, he would have conferred a much greater benefit upon those whom he professes to serve, and the public justice of his country would have stood highly indebted to him. He would have shewn that the pains and caution of Dr. Thomson, in the unfortunate case of Miss Cashin, were mere rhodomontade, an idle waste of the public time, and a libel upon the patience of the coroner and the jury. But he was rather tender about recurring to such particulars, for he must have consummated the climax of his absurdity, and have declared that Dr. Thomson's zeal and industry were any thing but a credit to himself and an honour to his profession. But I suspect Vindex is one of those money-getting hacks who alike infest and degrade our profession; who will see no motive so ostensible as a guinea, nor admit of any sense of public spirit or utility operating as a justifiable incentive, unless it involves some private compensation.

I care not whether my strictures are calculated to benefit myself or to gratify the families of either of the deceased; and my object was not to advance the science of surgery, but of medical jurisprudence. I have acquitted myself to my conscience, and discharged what I considered an imperative public duty. Perhaps, however, it may be a satisfaction to Vindex to know that the afflicted family of Captain Moir are well satisfied with my motives, and pleased with my humble effort; and that Dr. Fife, who happened to be in London, with the deputation to the King from the University of Edinburgh, read my paper—approves and entirely concurs in my view of the case.

ROBERT VENABLES.

Chelmsford, Sept. 6, 1830.

[We trust that Dr. Venables will excuse us for omitting his concluding remarks. They are entirely unconnected with the discussion, and are directed so pointedly against some particular individual who was, or is supposed to have been, the author of the letter signed *Vindex*, that we cannot regard them as calculated to serve any useful purpose.]

## CASES OF ULCERATION AND ABSCESS IN THE LARYNX.

*To the Editor of the London Medical Gazette.*

Lancaster County Lunatic Hospital,  
August 28th, 1830.

SIR,

The following cases of ulceration and abscess in the larynx, independent of pulmonary phthisis, and of poisoning by digitalis, which have recently occurred in this hospital, may perhaps be deemed sufficiently interesting to merit a place in your columns.

W. DAVIDSON,

Surgeon to the Lancaster Lunatic Hospital,  
and formerly House-Surgeon to the  
Liverpool General Hospital.

Peter McCoy, æt. 50, an old soldier, has had several attacks of paralysis, from which he partially recovered, so as to drag himself, with a painful effort, about the wards of the hospital, to articulate indistinctly, but with his mind reduced to absolute fatuity.

May 27th, 1830.—Confined to bed completely speechless, with hemiplegia and relaxation of the muscles of the right side; slight oppression, and flushing of the face; pulse small, quick, and feeble; emaciation and debility. Notwithstanding a variety of active treatment, he remained in this state until the 16th of July, when he died without coma—gradually exhausted.

*Section Cadaveris 24 hours after Death.*

—The corpus striatum of the left side was found reduced by ramollissement to the consistence of a soft pulpy mass. The lateral ventricles contained about four ounces of transparent serum; the choroid plexus was greatly enlarged, and presented an unusually red, turgid appearance. A little above the sella turcica, to the left, was observed, between the dura mater and arachnoid, an albuminous membranaceous deposit, of about an inch in breadth, and of the thickness of two lines, which could be readily detached from these membranes, the latter of which, for a considerable space around, was separated from the pia mater by an effusion of a similar description. The brain appeared in some parts unusually vascular, but presented no other morbid appearances. On the evening prior to this man's death there appeared over the thyroid cartilage a tumor of about the size of a pigeon's egg,

which seemed, on examination, to contain fluid, and communicated a distinct crepitus to the fingers. On laying open the integuments of the tumor by a longitudinal incision, an abscess, containing healthy pus, was discovered over the larynx, and extending amongst the cellular substance situated under the skin, and amongst the muscles of the fore part of the throat. The left plate of the thyroid cartilage, stripped of its perichondrium, was laid bare by the destruction of the left hyo-thyroidens muscle, and formed one of the parietes of the abscess. This cartilage was separated by ulceration throughout the whole extent of its obtuse angle, and from the cricoid at the fore part of the throat, by which the crico-thyroidei muscles were destroyed; and a ragged communication existed between the abscess and the cavity of the larynx. The mucous membrane of this cavity was found bathed in purulent matter, and perforated by innumerable small, deep, ragged ulcerations, of an ovoid form, and separated from each other by portions of the mucous membrane, of a deep red colour. The ligaments of the crico-arytenoid articulation were broken down by ulceration. The mucous membrane presented a considerable number of grey granulations, which appeared to be the mucous follicles in a state of morbid development. The epiglottis was enlarged, and its mucous membrane thickened and inflamed. The pus contained in the abscess and larynx might amount to two ounces. The trachea, bronchi, and pulmonary tissue, were found in a perfectly healthy state.

Here we have a case of chronic laryngitis, with ulceration and extensive abscess, which, until the last few hours of the patient's life, gave no other indication of its existence than a cough, which attacked him at intervals only, and was marked by such trifling severity as scarcely to attract attention. The absence of dyspnœa is also remarkable, and may be accounted for by the want of thickening of the mucous membrane, although the epiglottis presented an extreme degree of enlargement and general departure from its natural shape. Andral affirms that chronic laryngitis does not appear to augment the dyspnœa of consumptive patients, except when the ordinary calibre of the larynx is remarkably diminished in some part of its extent, either from an extraordinary

tumefaction of the mucous membrane, from a tumor growing on its surface, or which developed in the subjacent tissues, pushes the membrane before it; or by an œdema of the glottis. A case by this author, which I shall extract from the last edition of his *Clinique Médicale*, presents some points of resemblance with the one I have just described. "An ulceration of small extent," says this distinguished pathologist, "which increases in depth, may, by its situation, cause serious mischief. Such is the following case:—

"A man, exhibiting all the symptoms of an advanced stage of pulmonary phthisis, was admitted into La Charité during the summer of 1817. Towards the superior extremity of the obtuse angle which the median line of the thyroid cartilage presents, there existed a slight solution of continuity, with smooth margins, which could scarcely admit the head of a large pin, and through which there escaped, with a whizzing sound, a small quantity of air every time the patient expired or inspired with force. The voice was feeble, without being otherwise modified. On opening the body, no other alteration was detected in the larynx than a small round ulceration, which might admit an ordinary-sized pea, and which was situated at the angle formed by the union of the thyroid cartilage, a little above the anterior commissure of the chordæ vocales. The mucous membrane was destroyed throughout the space occupied by this ulceration; its fundus was formed by the thyroid cartilage, which, at its centre, exhibited the slight loss of substance which gave rise to the fistulous opening recognised during life.

"This is the only time that I have had an opportunity of observing a fistula of the larynx in the consumptive cases treated in the hospital of La Charité during many years—that is to say, in two thousand individuals; a circumstance which proves that such fistulæ are extremely rare\*."

The situation of the fistula in Andral's case, below the chordæ vocales and the thyro-arytenoidei muscles, accounts for the circumstance of the voice being preserved, although weakened. The case of McCoy presents a still more striking departure from the healthy condition, ap-

\* Andral, *Clinique Médicale*, tome 2d, p. 204. Paris, 1829.

parently unattended with pain or suffering of any kind, in an organ which, in a sound state, is gifted with such extreme sensibility as to be thrown into convulsive action by the entrance, not only of solid bodies, but of certain gaseous fluids; besides affording another of those rare instances of chronic laryngitis uncombined with bronchial or pulmonary affection; and presenting an aggravated form of disease to which I have found nothing similar in the numerous morbid dissections at which I have been present, and to which I have met with no parallel case in the course of extensive and laborious researches. One word more in reference to the cerebral affection in this case, which presents a fact not altogether unworthy of notice—namely, the total absence of pain and rigid contraction of the affected limbs—symptoms which have been so much insisted upon by the French pathologists, and considered by them as completely pathognomonic of *ramollissement* of the brain. My observations have led me to somewhat different conclusions, and which appear to be supported by the testimony of our own pathologists—namely, that such indications are by no means constant; that they exist in conditions of the brain totally opposite to this, and that, like almost every other cerebral symptom, they cannot be affirmed to depend uniformly upon certain and defined lesions.

August 24th, 1830, 6 P.M.—John Martinscroft, æt. 28, a healthy convalescent patient of this hospital, has just returned from out-door work in the farm attached to the institution; complains of sickness, nausea, vomiting, and headache. Says that he feels quite tipsy, and experiences an indescribable sensation of giddiness and swimming in the head. Unable to stand or walk. Tongue white; pulse 48, regular, and of good strength. Slight dyspnoea. Heat of the skin natural; countenance expressive of intense anxiety. Says that the matter vomited is exceedingly acid.

Sumat. M. ex Magnesiae, C. gr. xx.

Pulv. Rhei.

Confect. Aromat. a. a. ʒj.

Tinct. Cardamon. C. ʒj.

Aquæ Menth. Pip. ʒj.

25th, 8 A.M.—Has been awake and restless the whole of the night. Vomiting continues without intermission.

Rejects immediately every thing thrown into the stomach. Complaints of severe pain in the epigastrium, which appears to be aggravated by pressure. In a state of general languor, with some degree of stupor. Countenance pale and melancholic; eyes dull and heavy, feature immovable, intelligence affected, muscular movements slow and slovenly. Pulse 28, weak and intermitting after every third pulsation. Copious ptialism. Percussion gives an evidently dull sound in the præcordial region. On applying the stethoscope to this region, and to the lower part of the sternum, a remarkably distinct bellows-sound (*bruit de soufflet*) is heard at each systole of the ventricles, which conveys the impression as if the ventricular cavities, loaded and distended with blood, contract laboriously, and expel their contents with a painful effort. Natural impulse and sound of the heart almost entirely suppressed. The intermission above mentioned is perfect, and distinctly takes place after each contraction of the auricles. It is impossible not to feel the deepest interest in the enquiry, what is the affection under which this patient labours? His previously healthy state, the absence of almost every symptom pathognomonic of organic disease of the heart, except the intermissions in its action, the slight dyspnoea, and the very equivocal signs afforded by auscultation and percussion, preclude all suspicion of structural disease of this organ. Under circumstances presenting such obscurity of diagnosis, and with this salutary reflection of *Michellotis* present in our recollection, "*cavendum est ubi plura simul vitia deprehenduntur, ne sine certâ ratione, unum aliquod potissimum pro morbi causâ proponatur,*" it is deemed most proper to combat the most urgent symptoms, which appear to be the constant vomiting and retching, the epigastric pain, and the state of cerebral oppression.

App. Hirud. xii. regioni epigastricæ.

Sumat. Calomel, gr. ii.

Pulv. Rhei, gr. x. quaque tertiâ horâ ad effectum, et haust effervescent. salin. pro re natâ.

App. Empt. Lyttæ nuchæ.

6 P.M.—Great collapse and prostration of strength, but the mind is more entire. Vomiting and other symptoms unaltered. Bowels obstinately costive; urine exceedingly scanty; bladder



empty. Ordered an ounce of brandy, mixed with an equal quantity of warm water.

Injiciatur Enema Purg.  
Continuentur Medicamenta.

26th, 8 A.M.—Epigastric pain relieved. Bowels slightly opened. Vomiting and nausea less urgent. Has retained his breakfast. Collapse and prostration diminished. Pulse 30, and intermitting as before. Stethoscopic signs, as well as that afforded by percussion, the same. Urine still scanty.

Repeat the brandy.  
Omit. Pulv. Purg.  
Cont. Med. Alia.  
Rep. Enema.

7 *Vespere*.—Bowels have been freely evacuated. Epigastric pain gone. Partial recurrence of the vomiting; in other respects unaltered.

27th, A.M.—Countenance rather more lively, and expressive of greater energy. Slight return of the natural strength. Pulse 32, still intermitting. Bellows sound and dullness on percussion less perceptible. Partial vomiting. Other symptoms as before. Informs us, for the first time, that he had chewed, in the afternoon of the 24th, a considerable quantity of the leaves of foxglove, which he found growing on the hill adjoining the hospital; and that, in this instance, as it is his invariable practice when chewing tobacco, he swallowed his saliva. On questioning him further, he says that he might have chewed in this way about three of the largest leaves he could find. The rationale of the symptoms of the complaint is now pretty evident.

Sumat Ammoniaë Carb. gr. x.

Confect Aromat. gr. vj. quaque tertia horâ.

Let him have four ounces of brandy in strong punch immediately.

Rep. Enema. Purg.

*Vespere*.—Vomiting and nausea entirely suppressed, and he appears in every respect better. The pulse rose during the day for about ten minutes to 48, but fell down again to 32. The enema brought away some hard feculent matter. Urine more copious. Ptyalism nearly gone.

To have six ounces of brandy in punch daily.

28th.—Pulse 44, regular, and of tolerable strength. Bellows sound very

indistinct, as well as the dull sound elicited by percussion. Natural impulse and sound of the heart returning. Absence of dyspnoea. Appetite good. Countenance nearly natural. Tongue clean.

Pergat.

*Vespere*.—Pulse has ranged from 44 to 48. It may be worthy of remark, that the pulse is observed to increase in frequency for a short time after each exhibition of the brandy.

29th.—Pulse 60, natural.

Pergat.

30th.—Pulse 80; some debility; otherwise well.

Omitt. med.

The case just related furnishes us with one or two interesting subjects of speculation, on which I shall hazard some observations, without pretending to dogmatize on phenomena so obscure and almost beyond the reach of legitimate induction. The circumstances to which I would call attention are, the bellows sound heard during the ventricular systole; the dull sound in the præcordial region, conveying the impression of a dense mass lying immediately under the ribs; and the alarming reduction of the pulse through the direct agency of the poison, notwithstanding the excessive irritation which it occasioned in the mucous membrane of the stomach, and which manifested itself by pain in the epigastric region, and continued vomiting and retching. The congested state of the cavities of the heart, and the consequent dilatation\* of its parietes, which by this means were brought into closer continuity with the walls of the thorax, might have readily given rise to the dull sound elicited by percussion, while this very congestion, by embarrassing the systolic movements, may account for the suppression of the natural sound and impulse, and for the substitution of the *bruit de soufflet*. Laennec says, that he has frequently observed this sign in the last agony, and in circumstances when the heart is too full of blood, in which latter case it sometimes quickly yielded to venesection. It will scarcely be doubted, I think, that, ad-

\* "La dilatation du cœur est produite par la présence d'un trop grande quantité de sang dans les cavités de cet organe."—*Bertin*.

mitting this gorged state to have actually existed in Martinscroft's case, it arose from the muscular fibres of the heart being thrown into a state resembling palsy by the action of the poison, and into consequent inaptitude for the healthy and vigorous contractions of its cavities. The partial dyspœa may seem to favour this hypothesis of congestion in the heart and great vessels, both pulmonary and aortic. The remarkable reduction of the pulse affords a striking refutation of the opinion promulgated by Andral, and supported by the weight to which every observation coming from so illustrious and observant a pathologist is entitled, namely, that "*digitalis reduces the pulse only as it excites no irritation in the stomach.*" "We have seen," says this author, "a case in which the ethereal tincture of digitalis, administered in a mixture, had produced, at first, a sensible diminution in the frequency of the arterial pulsations. The dose was then advanced to 80 drops, given in 24 hours, in a six-ounce mixture, without producing any morbid phenomena in the stomach. Hitherto the pulse had become every day less frequent. On raising the dose to 90 drops, a slight pain was felt in the epigastric region; the pulse became a little more frequent, and on increasing it to 100 drops, vomiting took place, and the pulse, at the same time, acquired an extreme degree of frequency. The use of the digitalis was immediately suspended; the gastric pain subsided, but the pulse remained remarkably quick for some time\*."

It will occur to every one to observe the striking difference between the phenomena of the case recorded by Andral, and those of the one which, I fear, I have been so tediously minute in describing. Yet such cases as Andral's must be familiar to every practitioner, and are doubly important as conveying a lesson which no medical man can remember without a sense of self-congratulation. I have always considered the management of the exhibition of digitalis as involving difficulties and doubts, from which we are happily exempt in the administration of other articles of the *materia medica*, the efficiency of which is less dangerous and more uniform.

## ANALYSES &amp; NOTICES OF BOOKS.

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"L'Auteur se tue à allonger ce que le lecteur se tue à abrégér."—D'ALEMBERT.

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*Clinical Illustrations of Fever, comprising a Report of the Cases treated at the London Fever Hospital, 1828—1829.* By ALEXANDER TWEEDIE, M.D. Member of the Royal College of Physicians of London, Physician to the Fever Hospital, &c. &c.

It was our intention, as we announced at the time, to have combined an analysis of this work with the more elaborate production of Dr. S. Smith. Various circumstances prevented us from carrying this into effect, but we have thought it right that the two reviews should still appear in the same volume.

The little work before us will occupy our attention but a short time, it being not so much a clinical report as a general notice of fever, in which the numerous important points are so lightly touched upon as not to invite discussion. Clinical illustrations should be an exact though a concise report of such cases and remedial measures as illustrate the particular characters of disease and effects of treatment, which effects and characters should be further pointed out by a commentary attached to every individual case, and by a concluding summary of general results. In lieu of adopting this course, the author has gone into the whole subject of fever, by stating his opinions on the many difficult and disputed points, without bringing forward the grounds on which they are formed, or the testimony by which they are supported. The work, therefore, does not afford us the means for analyzing the validity of the opinions so advanced, which leaves us no alternative but contradiction to oppose the sentiments in which we do not concur, or affirmation to uphold those in which we agree; and as we are averse to a method so irrational, our notice of the work will be rather a short abstract than an analytical review.

The book is distributed into nine chapters, the two first of which contain some preliminary observations, and an account of the Fever Hospital. The third treats of simple and complicated fever; the fourth of typhus and its

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\* Andral, Clinique Médicale, tom. i. p. 79.

complications; the fifth of the causes of fever; the sixth of the mortality; the seventh of the history of the fatal cases; the eighth of the treatment; and the ninth and last of scarlatina.

In the preliminary observations it is stated that "the brain and nervous system are early and primarily engaged in the febrile action," and that "the circulation next partakes in the disorder;" that the sanguiferous excitement frequently goes on to inflammation, which may affect the brain, the organs of respiration, or the abdominal viscera; that the inflammation which thus supervenes is of a less intense kind than the ordinary phlegmasiæ; that fever is not inflammation, but that it is primarily a general disease, which in the largest proportion of cases becomes complicated with some local inflammation, and that the danger of the patient is always in proportion to the severity of the inflammation.

Into the origin and account of the Fever Hospital, we shall not enter further than to supply one historical fact which has escaped our author, namely, that the establishment of a Fever Hospital in this metropolis was first recommended by the gentlemen connected with the Public Dispensary\*.

"The period selected for the present report embraces one year, ending 1st September, 1829," during which there were admitted 521 patients, of whom 73 died, thus giving a mortality of about 1 in 7: and it appears from "the table of the comparative ages," that from the age of 15 to 25 is the period of life most liable to fever, which agrees with the statements of other authors. Dr. Tweedie includes the different forms of fever under the three divisions, of continued, periodical, and eruptive, which he again subdivides as follows:—

Continued,	Periodical,
a Simple.	a Intermittents.
b Complicated.	b Remittents.
c Typhus.	
Exanthemata,	
a Variola.	b Rubeola. c Scarlatina.

*Simple Fever* is fever without evident symptoms of local inflammation, of which more than 100 cases occurred within the period of this report. It is

characterized by increased heat, accelerated pulse, thirst, and general functional disorder.

In *complicated fever* the local disturbance may be in one or other of the organs of the head, chest, or belly.

Affections of the brain are the most common as well as dangerous complications. Of the 521 cases, 114 had well-marked symptoms of severe cerebral affection, in which the danger depended on the extent of the inflammation, although in only four cases did it seem to be the immediate cause of the fatal issue.

*Affections of the Organs of Respiration.*—"In 103 cases the lungs were more or less severely affected, of whom about one-third died." These affections comprehend inflammation of almost all the tissues of the lungs and air-passages, the most frequent being bronchitis, to which the doctor ascribes the imperfect arterialization of the blood, and its consequences. Inflammation of the substance of the lungs occurred in a considerable proportion of cases, and the remedy in which the author placed most confidence in this pneumonia, but more particularly in bronchitis, was the tartar emetic, in doses of one or two grains every second, third, or fourth hour.

*Of Abdominal Affections in Fever.*—Of the 523 cases, *seventy-one* had prominent symptoms of abdominal inflammation. The author conceives the morbid condition of the intestinal mucous membrane to be one of the specific effects of typhus. The spleen was often found soft and enlarged.

*Of Typhus Fever.*—Under this term are included "those fevers in which the brain and nervous system are early and severely affected, accompanied with symptoms denoting a morbid condition of the mucous membranes and skin, and a tendency to what is known by the term putrescency." *The simple typhus*, which is erroneously \* compared with adynamic fever of Pinel and Burne, is referrible in the commencement to functional rather than vascular disturbance in the brain, and is not very common. *The various com-*

\* See the Annual Report of the Public Dispensary, Bishop's-Court, Chancery-Lane,

\* We say erroneously, because the remarks of Dr. Tweedie on the adynamic fever of Dr. Burne do not correspond with the matter of that gentleman's Treatise; we will not, however, pursue this subject, as no doubt Dr. Burne will take it up in the next edition of his work.



*plications of typhus fever* are—(a) *in the brain*: when the inflammation is of a low character, and general blood-letting is seldom admissible;—(b) *in the lungs*: when the inflammation is apt to be confined to the bronchial membrane, and the symptoms are often very obscure;—(c) *in the intestines*: when an inflammation of the mucous membrane is the most usual complication; and our author hazards an affirmation that there are no symptoms on which we can depend to indicate the existence of gastro-enteritis. There was lesion of the mucous membrane in twenty-four out of fifty-four cases, and ulceration in sixteen out of the twenty-four, and intestinal perforation in two out of the sixteen. Petechiæ occurred in fifteen cases, of which four proved fatal.

*Erysipelas* is almost constantly prevalent in some of the wards of the Fever Hospital, and is apparently very fatal, as only some of the patients eventually struggled through.

*The causes of fever* are, in many cases, cold, intemperance, fatigue, long-continued watching; *scarcity and privation* are also much connected with the occurrence of fever among the lower classes. The doctor does not recollect a single instance of a butcher being sent into the Fever Hospital. The influence of the atmosphere on the prevalence of fever is very decided, in our author's opinion; and he has observed that there was a progressive diminution of autumnal fevers in the cold wet summers of the last two seasons. "A local impure air is a common cause in large cities; and when fever appears in such situations, it is said to spread with an appalling rapidity. Malaria, or a poisonous exhalation from the ground, is a cause which has been supposed to give rise to fever in an army encamped on a particular spot. Contagion is one of the many causes of fever, in support of which some strong evidence is brought forward. It seems that every physician (Dr. Bateman excepted) who has been connected with the Fever Hospital, has been attacked with fever during his attendance, and that three out of eight have died. "The resident medical officers, matrons, porters, laundresses, and domestic servants not connected with the wards, and every female who has ever performed the duties of a nurse, have one and all invariably been

the subjects of fever; and to shew that the disease may be engendered by fomites in clothing, the laundresses, whose duty it is to wash the patients' clothes, are so invariably and frequently attacked with fever, that few women will undertake this loathsome and frequently disgusting duty." p. 83. These instances, together with others which the author has supplied from various sources, will no doubt be regarded by many as decisive of the propagation of fever by contagion; and we recommend a reference to the work itself, for the very interesting matter under this article.

*Mortality of Fever.*—The annual mortality in the London Fever Hospital, during the time of Dr. Bateman, varied from one in three five-eighths to one in twelve. Since Dr. Bateman's retirement, it has varied from one in five to one in nine and a half.

*The History and Treatment of the Fatal Cases, with the Morbid Appearances observed on Dissection*, are next presented to our consideration; but as they are detailed at length to the number of 73, without any comment or summary, we are compelled to pass them over, as not admitting of any abstract which can be useful to our readers or satisfactory to ourselves.

The Doctor's observations on the *Treatment of Fever* are distributed under the heads of the various remedies usually employed, the first of which is *Blood-letting*. The administration of this important agent, though recommended with judicious caution and fair moderation, is yet insisted on more than our own experience sanctions. He says, "the experience of the decided benefits which result from blood-letting in the treatment of the patients at the Fever Hospital, fully warrant me in affirming, that there are few cases which are not materially benefitted by its judicious employment, and I had too often reason to regret that it had not been performed at the commencement of the disease." p. 166. Like every person who advocates the loss of blood generally in fever, the author has probably met with many instances where harm instead of good resulted, which may have suggested to him the propriety of modifying the above opinion, by the paragraphs which we subjoin.

"As far, however, as my experience of the epidemic fever of London, for the last ten years, has enabled me to

judge, the symptoms have generally required the employment of blood-letting at the commencement; yet, from the facts stated, and from what has been observed by many practical writers, I think it should be kept steadily in mind that an epidemic may appear which will not bear the same bold treatment which has been recommended in this report; and I would again take the liberty of reminding those who scarcely draw any line of distinction between complicated fever and common inflammation, that there are modifying circumstances in fever which render the system unable to withstand large losses of blood without great hazard. I have seen many instances of fever in which it came to be a point of serious deliberation whether or not the patient could survive the measures necessary to extinguish the inflammation which had been kindled in some important organ, which, if unarrested, must have proved fatal."

"In short, much judgment and discrimination is often required in the use of the lancet in fever, since, after it has advanced beyond a certain stage, the measures which at a more early period would have been proper, are not only inapplicable, but often positively injurious, if not fatal." p. 175, 176.

Of the use of the other remedies—emetics, purgatives, &c.—it is not necessary here to speak; we will therefore pass on to the *Treatment of Typhus Fever*, on which our author remarks, "as a general rule, this form of fever neither requires nor bears phlebotomy."

The work concludes with a very short chapter on *Scarlet Fever*, which is said to occur under the three distinct forms of scarlatina simplex, anginosa, and maligna, which require to be treated according to their particular characters.

We have now given a very concise abstract of Dr. Tweedie's Clinical Illustrations, and we are sorry that the matter of the work has not enabled us to do more. As we have been told it is the Doctor's intention to publish an annual report of the cases treated by him in the Fever Hospital, we take the liberty to direct his attention to the remarks at the outset of this article—the use of a clinical report depending very much on the form in which it is laid before the reader. The present work is rather a treatise made up of skeleton opinions (those on contagion excepted), which are not supported, much less substan-

tiated by evidence; and this is the more to be regretted, as very ample materials may at all times be derived from the Fever Hospital. From a physician who has been ten years connected with the Fever Hospital of this great metropolis more is expected, and as we know Dr. Tweedie has industry, so we hope he will have patience rationally and sedulously to examine his opinions, and to test them by a comprehensive view and close contemplation of the relation of the phenomena of Fever.

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## MEDICAL GAZETTE.

Saturday, September 25, 1830.

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"Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."—CICERO.

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### THE OFFICE OF CORONER.

THE city has been for some days past in a state of confusion and uproar, occasioned by the competition of two candidates for the coronership of Middlesex: such a scene of misrule, riot, and disturbance, has rarely been witnessed within the precincts of Clerkenwell. It is understood, too, that large sums of money have been expended by the competitors;—all the usual expedients of electioneering canvassing, and applications of every sort, were had recourse to;—and it may reasonably be inferred that the direct emoluments or the collateral advantages must be considerable, when the place is sought after with such avidity—when such an outlay is made, and when there is so much eagerness displayed in the pursuit of the object\*. Of its general desirableness there can be no doubt—it was sufficiently evident from the spirit with which it was contested. But what induces us to take notice of the recent election at all is, that the question of the propriety of the occupant of

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\* The direct emoluments we understand average from 500*l.* to 700*l.* per annum.

the office being a medical man was nominally, though not in fact, mixed up with it; and upon this we conceive it our duty to offer some remarks. We may be readily acquitted of all bias or *esprit de corps* in treating the subject, when it is known that the conclusions at which we arrive are those which might seem to favour the pretensions of a certain good friend of ours, the Editor of the *Lancet*, who fought it out to the last—and at the last was unsuccessful.

For some of the very best reasons in the world the office of coroner ought to be occupied by a man of medical education. The functions of the office are judicial and ministerial—but principally the former. It is the coroner's chief duty "to inquire, where any person is slain, or dies suddenly, or in prison, concerning the manner of his death." It is, therefore, essentially a medico-legal question that he has to determine: he has to draw the nicest distinctions as to the signs and tokens of the death of the deceased—he has to weigh well the circumstances and the appearances about the body—and thence to decide on the certainty or non-certainty of violence having been offered. It comes then to be considered who is best adapted for holding this inquisition—whether he be the medical practitioner, who is familiar with such appearances and has made them his peculiar study—or the lawyer, who has merely been in the habit of applying the rules of evidence: and—since there are few instances of both being combined, with any degree of perfection, in one and the same individual—whether the physician can superadd with less difficulty the required portion of legal knowledge, or the lawyer an adequate quantity of medicine. On this head we can cite the opinion of an able writer: "The law connected with the duties of coroner lies within a very narrow compass; while the medical knowledge that may be necessary to arrive at sound con-

clusions in many doubtful cases of poisoning, infanticide, malpractice, &c. on which the coroner is called upon to pronounce judicially (though fortunately not in the last resort) on the guilt or innocence of the prisoner, embraces a wide field of investigation." Argument, in short, is quite needless to prove the superior fitness of the medical man for holding the situation of coroner—it is simple matter of fact; he has certain duties to perform, for which certain qualifications are requisite;—these are the qualifications with which his professional education has furnished him, and with which none but those who have received such an education can be provided.

But it may be asked, are there not duties connected with the office of coroner which are quite beyond the physician's province? To which we answer, no; there is nothing the coroner has to do in the legal way that is beyond the province of any unprofessional man of common understanding. Even in his ministerial capacity, which he is, indeed, most rarely called upon to exercise, he has only to act after certain simple forms; his duty upon such occasions is merely to act as the sheriff's substitute. "When just exception can be taken to the sheriff for suspicion of partiality (as, that he is interested in the suit, or of kindred to either plaintiff or defendant), the process must then be awarded to the coroner instead of the sheriff, for execution of the King's writs." And this is the whole of the coroner's ministerial duty.

Is there not, however, much technical nicety requisite in admitting and weighing the evidence? In no court of inquiry are the rules of evidence so lax. "The coroner," says one of our chief justices, "ought to allow counsel and witnesses on both sides, as well for the *felo de se* as for the King, if required; for as the law has greatly favoured inquests before coroners, in not permit-



ting them to be traversable (?), they ought not to do wrong, and conceal the truth, which is a thing odious to the law." Here, then, is the only possible pretext for the interference of a lawyer; the greatest latitude is allowed in the admission of evidence; and it might seem that it belonged only to the man of legal acquirements to draw the correct conclusions. Whether this has generally been the case—and particularly in a very recent instance—the public are perfectly competent to judge.

But we speak loosely when we institute a comparison between the lawyer and the medical man. By the appellation of *lawyer*, we mean the man of liberal and learned education, who has made the science of law his study, and who has practised in Westminster-Hall or in our criminal courts, then might there be some shadow of ground for comparing him with the man of liberal education and medical acquirements; though, as we have shewn, the balance is incontestibly in favour of the latter, when the business of the coronership is in debate. But when we see how the office is usually filled, and how the name of lawyer is so grossly misapplied—being, in common parlance, vulgarly bestowed upon the mere attorney, who is notoriously as ignorant of the laws of evidence as he is of medical science, and who from his habit of looking up to the gentlemen of the bar for assistance in every little affair of professional difficulty, is most likely to be misled by the influence of counsel interfering on inquests, and from this circumstance is peculiarly unfitted for the duty of presiding in such a court—the comparison in this instance, we say, must utterly fail; there is no ground for forming it. If the medical man be deficient in certain technicalities and forms of minor importance on inquisitions, the *lawyer*, or rather, as we must call him, the *mere*

*attorney*, is doubly incompetent, being deficient both in medicine and law. What does he know of the laws of evidence? where should he have learned their application? does he not in every instance in which he is professionally employed require the assistance of counsel, to advise and direct him in the management of his client's case? And if in all the usual routine of his practice he has been accustomed only to the discharge of mechanical functions, with what pretension can he step at once from behind the desk to perform the serious and solemn duties of a judge? In truth, when we consider that the Lord Chief Justice of the King's Bench is the principal coroner in the kingdom, we cannot but be struck with the immeasurable distance, in point of mental acquirements, between his lordship and his brother coroners; and we are led to deplore with Blackstone, "that the office has been suffered to fall into such disrepute, and to get into low and indigent hands, so that although formerly no coroners would condescend to be paid for serving their country, and they were by the aforesaid statute of Westm. 1. expressly forbidden to take a reward, under pain of a great forfeiture to the king; yet, for many years past, *they have only desired to be chosen for the sake of their perquisites.*"

The coroner's is a very ancient office, coeval and coequal with the sheriff's; both, indeed, are mentioned together in the well-known lines of Chaucer:—

"A shereve hadde he ben, and a coronour,  
Was no wher swiche a worthy vavasour."

It was enacted by the statute of Westm. 1. that none but "lawful and discreet knights" should be chosen; and there was an instance of a man being removed from the office of coroner because he was only a merchant. Qualifications of a much inferior character were afterwards deemed sufficient; but

even now it is proper that he who is elected should have estate enough to maintain the dignity of the office, and answer any fines that may be set upon him for his misbehaviour; if he have not, his fine may be levied on the county as the punishment for electing an insufficient officer. The coroner is chosen for life; and herein may be observed the importance of choosing a discreet and proper person; but he may be removed under various circumstances—for these, among others: That he is engaged in other business, is incapacitated by years or sickness, hath not a sufficient estate in the county, or lives in an inconvenient part of it—and, finally, for extortion, neglect, or misbehaviour.

We have thought it worth while to note these latter particulars with some degree of precision, for they seem to us to belong to that small but precious collection of remedies which the law has laid up in store against its own abuses, but which it suffers by neglect to become good for nothing. We should be better acquainted with the *materia medica* of the law; and many of our readers, we dare say, will bethink themselves of numerous instances which have occurred of late, in which those remedies might be applied with good effect: and unquestionably the writ *de coronatore exonerando* is not one of those that should be suffered to grow stale and unprofitable in the medicine chest\*.

The office of coroner, then, we have seen was once highly respectable. It is still an important office: the coroner's

court, though it has lost much of its ancient dignity, is, in fact, an institution of greater utility than many of those for which we are in the habit of extolling the wisdom of our ancestors. It is not commonly appealed to as one of the blessings of the British constitution, but in a country where the police is acknowledged to be most defective, it has been a more powerful instrument towards securing the detection and punishment of great crimes, than the most rigorous system, unaided by a similar institution, in other countries. In the capital of France, for instance, where there is no institution similar to that of the coroner's inquest, not a week passes in which the bodies of persons, bearing evident marks of assassination, are not exposed at the Morgue, and regarded with perfect indifference by the public, no inquiry being ever made into the circumstances by which those unfortunate persons came by their death, unless the relations of the deceased be sufficiently wealthy to put the law in motion.

But if the holding of inquests constitutes so valuable a feature in our form of government, and elevates the office of coroner into one of so much importance, it must be added that it is also subject to great and manifold abuses. Among these we may particularly mention the holding of unnecessary and frivolous inquests, for the sake of enhancing the officer's fees—the smuggling of juries—or the total suppression of inquiry where sufficient inducement can be held out by the wealthy relatives of the deceased. Cases have occurred in which money has been extorted for not holding inquests; but cases of bribery, for the suppression of inquests, are probably of more frequent occurrence than those of extortion. Now all these abuses, we apprehend, can only be guarded against by electing men to

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\* We admire much the candour of the Times, which, on publishing—at the suggestion of some ill-advised friend of Mr. Stirling's—that gentleman's charge to the Jury on Miss Cashin's inquest, prefaced the insertion of the curious document with these words:—"Valeat quantum valet—our opinion remains unshaken. Mr. Stirling is a worthy gentleman; but if at his very advanced age he could be spared the discharge of functions requiring vigour both of body and mind, we think he would be a gainer—and that the public would incur no loss."

the office, whose honesty, respectability, and independence, may place them beyond the reach of temptation.

We hold, and must persist in holding, that the fittest candidate for the office is the medical man; but not, we would add, the *mere* medical man—he must combine with professional knowledge the qualities we have just enumerated, otherwise he can never command the respect or secure the confidence of the public. How far the medical candidate on this occasion has shewn himself to be possessed of these qualifications—how far honourable and virtuous principles have regulated his public acts—how far an adherence to truth, and a freedom from envy and malice, have displayed themselves in his writings, the readers of this journal must be tolerably well qualified to judge. Whether the medical profession would be safe in the hands of one who urged on the people, as his principal claim to their support, that he would stand between them and the atrocities of his own brethren—those “blood-stained scoundrels” on whose delinquencies he so freely descanted—we leave for them to decide. We may, however, state it to be within our own knowledge that this language induced some to vote for Mr. Baker who originally intended to have supported his opponent. In fact, had Mr. Wakley enjoyed the good opinion and active co-operation of the respectable part of his own profession, it is obvious, from what he did without them, that with them his success must have been not only certain but triumphant.

In many parts of the country it is common for the coroner to be a medical man, and we hope, at no distant period, to see the same order of things established in the metropolis. As yet, however, we deny that the question of a medical or non-medical coroner has here been tried, or would have been decided had Mr. Wakley been

elected, for he is not known to the public as a practitioner, but exclusively as a vituperative writer against the medical profession, on which grounds alone his connexion with medicine availed him in his recent struggle. No man, possessing the slightest observation, can fail to have perceived that the late contest was merely a political one—between the lower class of freeholders, headed by their favourite champion, Hunt, and the less inflammable part of the community. Various resolutions of a party nature were put, and of course adopted by the “majesty of the people,” mingled with brutal allusions to the dreadful death of Mr. Huskisson, and bitter invectives against the press\* for not reporting more fully their revolutionary harangues†. The cry was not, Mr. Wakley shall be coroner, because he is a medical man, but because he is avowedly a “radical”—the friend of Hunt and the protégé of Cobbett. Our contemporary, by declaring (see his advertisements) that he has abandoned the medical profession, has laid its members under the greatest obligation which it was in his power to bestow upon them, while, by openly connecting himself with the leaders of the democratical party in politics, he has given a new colour to his proceedings, and opened a wider field for his exertions. These new pursuits, however, are wholly foreign to the objects of this journal—nor shall we attempt to enter upon them; ours be the more grateful task of following the paths of medical science, and protecting the rights and privileges of those by whom it is professed, not in one of its departments only, but in all.

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\* From this censure the “Morning Chronicle” is exempted, which has had the singular merit of reporting all the trash uttered on this occasion.

† We understand that an intimation was sent by the sheriffs to one of the speakers—a medical man—to the purport that if he did not desist from addressing to the people such inflammatory language they would be compelled to commit him.



## HOSPITAL REPORTS.

## WESTMINSTER HOSPITAL.

*Case of ruptured Urethra, with Infiltration of Urine—Cure.*

JOHN MASON, æt. 25, was admitted, 1 P.M. June 13th, 1830, under Mr. White, presenting the following appearances. The end of the penis is evidently in a state of sphacelus, of a livid deep-red colour. The whole of the penis is swelled and inflamed; the scrotum distended and enormous in size, larger than a child's head, and in parts of a livid colour, more especially the left side. The effusion extends up the parietes of the abdomen and across part of the thighs; its termination is marked by a distinct red margin. Some slight traces of hæmorrhage are remarked, apparently from the end of the penis. Pulse 112 in the minute, full, jerking, but easily compressed; tongue pale, and slightly furrowed in the centre; countenance pale and anxious; skin hot and moist.

He states, that about a year and a half ago he contracted a gonorrhœa, having been similarly affected several times previously; this last continued about four months. He says he also had a sore on the glans penis. He was under the care of a medical man. At this time he first began to feel a difficulty in making water, and the gentleman who attended him failed in his endeavours to pass a bougie. He remained under the same person's care for six months, during which time he was occasionally troubled with retention of urine, which was relieved by medicine. The attempt to pass a bougie was repeated several times—always with the same ill success. He has since this time had frequent returns of the difficulty in voiding his urine, but has generally relieved himself by taking small doses of nitre.

Early yesterday morning he again felt a retention of urine, and had recourse to his usual remedy, but this time without the desired effect. In the evening, having been unable to void his urine all day, he applied for assistance to some Quack, who ordered him a warm-bath and some medicines, which had no effect. The penis was now looking swelled and inflamed. He went into the bath, and while there made several violent efforts to relieve his bladder. On getting out, he perceived the whole of the scrotum swelled and painful. This swelling continued to increase, and two or three superficial scarifications were made on the scrotum, from which there was a trifling discharge of urine, and he thought himself in some degree relieved by it. An oozing has continued through one of the openings, accompanied with a slight hæmorrhage. His bowels were freely opened yesterday, but not to-day. No urine has passed since yesterday morning at ten o'clock.

Mr. White saw him about three o'clock, and immediately made two deep incisions through the integuments of the scrotum on each side of the raphé, nearly the whole length of the scrotum, from whence a serous fluid poured out in considerable quantity, mixed with blood from a few divided cutaneous vessels. The whole quantity, about 3viij. coagulated almost instantaneously; it had all the appearance of blood, being coloured by the slight hæmorrhage from the small vessels divided, and had very little of the odour of urine. An incision was also made through the prepuce, and carried down some distance. It was quite evident that much greater injury had taken place on the left side of the scrotum and penis than on the right; the left portion of the penis, which was described of a deep brown colour, had certainly lost all circulation, and was cold to the touch, while all the surrounding parts were hot. The incision on the left side of the scrotum also shewed a quantity of black coagulated blood, as though it had been effused from some ruptured vessels; on carrying the scalpel a little deeper into it, an ounce or two of dark fluid was pressed out.

Almost immediately after the incisions were made, while the fluid was pouring out, the whole of the red margin, before very distinct, and extending as high as the umbilicus and a little beyond the superior spinous processes of the ilia on the thighs, became gradually fainter and paler, until it was impossible to trace it. The whole surface lost its redness, and the integuments appeared rather less puffy. The scrotum was reduced to half the size first described. The hæmorrhage from the smaller vessels entirely ceased in a few minutes, and fomentations were ordered to be applied. Common saline mixture to be administered. Pulse 130, small and regular.

9 P.M.—The swelling is very much decreased. The flow of urine seems copious; he is quite free from pain either in the abdomen or scrotum. The abdomen is tender, however, on pressure. Pulse a little quicker, 133, but fuller and harder than when last noticed. Skin hot and dry.

14th.—The scrotum is still more diminished in size. The slough in part detached. The red black on the lower part of the abdomen, spreading on to the thighs, has returned; no puffiness observable on pressure. Tongue white; pulse 104, full, but not hard. He is free from pain, and has lost all anxiety of countenance.

15th.—His countenance is cheerful; scrotum nearly diminished to its natural size; he suffers no pain.

17th.—Much the same. The urine passes by the natural passage, and apparently without difficulty. Fomentations to be discontinued, and the scrotum dressed.

19th.—Mr. White saw him to-day, and,

on examining above the pubes, there was a dusky-yellow redness observable, and it was evident that some degree of sphacelation was going on beneath. On pressing immediately above the pubes the integuments yielded, and a dark putrid matter, of very fætid odour, was pressed out of the original wound below. A director was introduced, and passed up nearly the whole length; about three inches of this was slit up, and some of the same dark fluid evacuated. The slough at the end of the penis separated yesterday. He says he is free from pain; the centre of his tongue has a yellowish brown fur.

R Acid. Muriat. ℥j.  
Syrup ℥ss.  
Aq. Distillat. ℥iss. M. ft. potio.  
R Conf. Arom. ℥iss.  
Potassæ Subcarb. ℥iv.  
Succi Limonis q s.  
Vin. Ant. Tart. ℥j.  
Aq. Distillat. ℥vj.

M. sumat cochl. iij. ter in die.

25th.—For some days poultices and fomentations have been again employed. The surface has become rather more healthy. Two days ago his extremities were cold, his pulse feeble and fluttering, and he seemed sinking; he has, however, rallied a little, assisted by wine, liq. opii sedativus, &c. He has taken four ounces of wine daily, but none to day. A slightly inflamed enlargement became apparent yesterday in the seat of the right parotid gland, extending to the mastoid process; the power of opening his mouth has been lost during the day, and any attempt to separate the jaws gives great pain at the inflamed part and in the head. He is certain the urine passes by the urethra, and tolerably freely; his bowels are slightly confined. Pulv. Rhei ℥j. statim.

26th.—There is an erysipelatous blush about the swelled side of the face. A great deal of sloughing is still going on about the scrotum and penis, and it gives out a very fætid and offensive odour.

To continue his wine and beef-tea; he has no appetite; pulse feeble.

28th.—The other side of the face is affected in the same manner, and the erysipelas is extending. The patient's strength has not sensibly diminished for some days.

30th.—The erysipelatous blush is disappearing; there is still much swelling about both the angles of the jaw; he cannot open his mouth sufficiently to shew his tongue; bowels open; pulse small, firm, regular, and 105 per minute; he is tolerably free from pain; the urine passes freely; nearly the whole of the penis has sloughed away; healthy granulations are appearing on the scrotum; the countenance is less anxious. Poultice at night, and dressing during the day.

From this time he continued gradually recovering, his strength increased, and the

scrotum and penis healed by slow degrees, until July 28th, when he was dismissed, with a recommendation to go into the country, a very small portion of the scrotum only remaining uncicatized.

There are many interesting points to be considered in this case. First, the excessive degree of mischief produced in little more than twenty-four hours; the greater part of the prepuce had entirely lost its vitality, and was cold to the touch; while the whole of the left side of the penis and scrotum was evidently more seriously injured than the right; hence we may conclude that it was on the left side the urethra was ruptured. The inflammation and consequent enlargement of the glands about the angle of the jaw and neck were also worthy of remark, for it appeared more than probable they were the result of absorption of the ill-conditioned matter formed below. In such cases it is very generally the practice to cut down upon the urethra, so as to secure a free passage for the urine; but the result proved that in this instance such an operation was not required.

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#### MR. LAWRENCE'S LECTURES.

We this week bring to a close Mr. Lawrence's valuable course of Lectures on Surgery. Of the manner in which they have been reported our readers will form their own opinions; we shall merely say that the greater majority have been carefully prepared from the copies of two short-hand writers. We have thus been enabled to avoid those numerous blunders which have defaced the pages of our contemporary; and which, while they are eminently calculated to bewilder the student, constitute, in numberless instances, the most ludicrous perversions of the lecturer's meaning.

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#### AMOUNT OF FEES AT DIFFERENT SCHOOLS.

In our next number we shall give a tabular view of the expense of the medical classes at some of the principal schools in the metropolis, by which it will appear that the notice we published the week before last was wrong, inasmuch as the fees at the London University exceed those at the other schools in a far greater extent than was there stated.

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#### NOTICE.

We have to apologise to numerous correspondents for having postponed the insertion of their papers, but we have been compelled to do so in order to complete various subjects which we were anxious to bring to a close with the present volume.

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#### ERRATUM.

In Dr. Hope's paper in our last Number, page 1021, in the *Diagnosis*, insert the words "great disease of the valves."

# SYLLABUS

## OF

### MR. LAWRENCE'S LECTURES,

*Contained in the present and preceding Volume.*

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**INTRODUCTORY LECTURE.** Objects of the course. Enumeration of the subjects usually comprised under the term Surgery. Distinction between surgery and medicine. Necessity of studying medicine generally—Comprehensive knowledge of the whole science necessary for the surgeon. Mode of study. History. Books.

**GENERAL PRELIMINARY OBSERVATIONS.** Health—Disease—Organic and functional disease. Various points for consideration in each disease. Number and variety of diseases—Nosological arrangements. Plan of the course.

**INFLAMMATION.** Symptoms in the part—Effects—Sympathetic influence on other parts. Explication of the symptoms—Theory of inflammation—Varieties of inflammation—in degree, acute and chronic—in effect—according to structure—common and specific. Causes—direct—remote—general plethora. Sympathetic influence of disease in other parts—Idiopathic and sympathetic disease—Disorder of the digestive organs—Mode of production—Symptoms.

Treatment of inflammation—of acute—of chronic—Diet.

Fever, Idiopathic—Sympathetic. Varieties of the latter—Inflammatory—Gastric or bilious—Typhoid—Irritative?

Suppuration—Abscess—phlegmonous—chronic—Fistula. I hectic fever.

Mortification. Local changes—General symptoms. Causes and treatment generally considered. Time of amputation. Particular mortifications—Acute and chronic—Frost-bite—Traumatic gangrene—Question of amputation—Gangræna senilis.

Ulceration—Granulation—Pus—Cicatrizati-  
zation. Reproduction of lost parts? Common and specific ulcers—Healthy ulcer—Indolent—Inflamed—with sloughing—Phagedenic ulceration—Sloughing phagedena—Hospital gangrene.

**MECHANICAL INJURIES.** Wounds, simple

incised, including surgical operations. Union by adhesion—Explanation of the process—Animal engraftings—Art of restoring noses, lips, and other parts. Treatment in order to procure adhesion—Local means—Sutures—Approximation by plasters, bandage, &c. General treatment—Diet. Hæmorrhage—primary—secondary. Treatment previous and subsequent to operations. Union of wounds by granulation and cicatrization. Lacerated and contused wounds. Bruise—Ecchymosis. Punctured wounds. Gun-shot wounds—Question of early or delayed amputation. Nervous symptoms consequent on injuries—Tetanus.

**CHEMICAL INJURIES.** Effects of heat—Scalds—Burns. Effects of various acrid and escharotic substances—Potash, ammonia, lime, strong acids, nitrate of silver.

**INJURIES OF A MIXED NATURE.** Poisoned wounds—Hydrophobia—Bites of venomous serpents—Stings. Injuries received in dissection? Malignant pustule.

**SPECIFIC DISEASES.** Scrofula. Gout. Rheumatism. Venereal diseases—Gonorrhœa—Syphilis—Cancer. Fungus Hæmatodes—Melanosis.

**DISEASES OF THE CELLULAR MEMBRANE.** Phlegmon—Boil—Carbuncle. Diffused inflammation. Edema—its various kinds—Phlegmasia dolens. Emphysema. Tumors—Sarcomatous and encysted—their various species—Mode of extirpation.

**SKIN.** Various inflammations, acute and chronic. Exanthemata—Erysipelas, simple and phlegmonous—Urticaria. Papular inflammations. Vesicular—pustular—scaly affections. Tubercular changes. Lupus, or Noli me tangere—Cancerous ulceration. Affections of the nails—Nail growing into the flesh—Paronychia—Onychia—O, maligna. Warts. Corns. Bunyon.

Nævi materni.

**VASCULAR SYSTEM.** Arteries. Wounds—Punctured—Arteriotomy—Complete di-



vision. Hæmorrhage—Compression—Styp-tics. Ligatures, their materials, mode of operation, and effects. Inflammation. Organic change—Thickening of the internal coat—Ossification. Aneurism—the various species, true, false, circumscribed, diffused, varicose—History—Effects, and natural cure. Treatment—by compression—by ligature, between the heart and tumor, or beyond the tumor. Particular aneurisms—of the aorta—its treatment—method of Valsalva—Of the smaller arteries—Operations.

*Veins.* Wounds—Hæmorrhage—Compression—Ligature—Venesection inflammation (Phlebitis). Varix—Rupture—Hemorrhoids. Varicocele, referred to testis.

**OSSEOUS SYSTEM.** Wounds of bone—Contusion—Bone exposed in wounds—its granulation—Death and exfoliation. Fractures, simple, compound—Various complications. Particular fractures. Inflammation of the periosteum—and medullary membrane. Necrosis. Exfoliation. Caries. Exostosis. Osteo-sarcoma—Excision of diseased bones, particularly of the lower jaw. Rickets. Mollities ossium. Diseases of the teeth.

**JOINTS.** Wounds—simple—with laceration—with fracture. Dislocations—general observations—particular dislocations. Inflammation of the synovial membrane—Change of structure and thickening. Dropsy of joints. Ulceration of the articular cartilages. White swelling. Loose substances in joints.

**NERVOUS SYSTEM.** *Brain.* Injuries of the head. Wounds of the scalp; incised, lacerated, contused, with detachment, with hæmorrhage, with exposure of bone. Erysipelas—Inflammation of the cellular membrane under the aponeurosis. Inflammation and detachment of the pericranium and dura mater. Fractures of the cranium; various cases—Fractures with depression. Extravasation of blood—within the cranium—on the dura mater—under it, in the brain. Compression of the Brain. Concussion; Inflammation of the membranes; of the substance of the brain. Softening of the brain. Abscess. Elevation of depressed bone—Operation of trepanning. Hernia cerebri.

*Spinal Cord.* Injuries of the spine—Fractures—Luxations—Concussion. Diseases—Simple curvature—Caries with curvature and paralysis. Caries of the occipito-cervical articulations. Inflammation of the cord—Paraplegia—Spina bifida—Operations.

*Nerves.* Wounds—Contusions—Inflammation—Neuralgia. Diseases of particular nerves—Sciatica—Tooth-ache. Operations for the division of nerves.

**MUCOUS MEMBRANES.** Inflammation—Increased and altered secretions—Aphthæ—Ulceration—Stricture—Polypi—Warts.

Diseases of the conjunctiva and lachrymal

passages, referred to the eye—of the mouth, fauces, and œsophagus, to the organs of mastication and deglutition—of the larynx and trachea, to the organs of respiration—of the bladder and urethra, to urinary organs. Diseases of the nose and nasal sinuses.

**SEROUS MEMBRANES.** Peculiar characters and effects of inflammation. Hydrocephalus. Inflammation of the pleura—Empyema—Hydrothorax. Inflammation of the pericardium; dropsy. Operations. Peritonitis; ascites—Paracentesis. Wounds of the serous cavities; of the thorax—with protrusion of the lung; of the abdomen—with protrusion or wound of the contents—Effusions.

**FIBROUS MEMBRANES.** Inflammation of the periosteum and pericranium—Chronic swelling (node)—Periosteal exostosis—Other changes of structure. Tumors of the dura mater.

Inflammation of the bursæ—Effusion into them. Ganglion. Inflammation of fasciæ.

**MUSCULAR AND TENDINOUS SYSTEMS.** Wounds—Lacerations—Contusions—Strains—Rupture of the tendo achillis—Inflammation—Wry neck.

**GLANDULAR SYSTEM.** *Mamma.* Common inflammation and abscess—Scrofulous affection and abscess. Enlarged lactiferous tube. Various indolent and innocent affections. Malignant diseases. Operation of extirpation—Affections of the nipple. Diseases of the male breast.

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